National Energy Board
Office national de l'énergie

Reasons for Decision

Enbridge Pipelines Inc.

OH-002-2013

March 2014

Facilities and Toll Methodology

Canada

National Energy Board

Reasons for Decision

In the Matter of

Enbridge Pipelines Inc.

Application dated 29 November 2012 for the Line 9B Reversal and Line 9 Capacity Expansion Project

OH-002-2013

March 2014

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Table of Contents

List of Figures iii
List of Tables iii
List of Appendices iii
Glossary of Terms, Abbreviations and Units iv
Recital and Appearances x

1. Disposition 1

2. Introduction 5
- 2.1 Background 5
  - 2.1.1 The Board's Mandate and Oversight 5
  - 2.1.2 The History of Line 9 8
- 2.2 The Application and the Board's Assessment 9
- 2.3 OH-002-2013 Hearing 11
  - 2.3.1 Hearing Order and Hearing Process 11
  - 2.3.2 Participant Funding Program 13

3. Public Participation and Engagement 15
- 3.1 Board Expectations for Company Consultation Programs 15
- 3.2 Enbridge's Consultation Program 15
  - 3.2.1 Consultation with Landowners, Residents, Associations and Other Potentially Affected Persons 15
  - 3.2.2 Consultation with Government Stakeholders 24

4. Facilities 27
- 4.1 Description of Facilities 27
- 4.2 Design, Construction and Operation 27
  - 4.2.1 Design, Codes and Standards 27
  - 4.2.2 Construction 28
  - 4.2.3 Operation 28
    - 4.2.3.1 Hydraulic Design 28
    - 4.2.3.2 Service Fluids 29
    - 4.2.3.3 Drag Reducing Agent 30
    - 4.2.3.4 Sectionalizing Valves 31
    - 4.2.3.5 Pressure Transients and Overpressure Protection 31
    - 4.2.3.6 Pipeline Control 32
    - 4.2.3.7 Leak Detection 32
    - 4.2.3.8 Right-of-Way Inspections and Maintenance 33
    - 4.2.3.9 Emergency Shutdown System 34
- 4.3 Pipeline Integrity 39
  - 4.3.1 Integrity Management Program 39
  - 4.3.2 Corrosion/Metal Loss 40
  - 4.3.3 Cracking 41
  - 4.3.4 Mechanical Damage 43

- 4.3.5 Geohazard Management 43
- 4.3.6 Hydrostatic Pressure Testing (Hydrotesting) 43
- 4.3.7 Independent Third-Party Review of the Updated EA 44

5. Accidents, Malfunctions and Emergency Response 51
- 5.1 Regulatory Requirements 51
- 5.2 Potential effects of accidents and malfunctions 53
- 5.3 Emergency Response Plans (Emergency Procedures Manual) 59
- 5.4 Emergency Response Exercises and Training 61
- 5.5 Incident Response and Financial Capability 63

6. Environment, Socio-Economic and Land Matters 72
- 6.1 Project Details 72
  - 6.1.1 Construction Phase 73
  - 6.1.2 Operations Phase 73
  - 6.1.3 Abandonment Phase 74
- 6.2 Environmental and Socio-Economic Assessment (ESA) 74
  - 6.2.1 The ESA Methodology 74
  - 6.2.2 Environmental and Socio-Economic Issues Raised by Participants 74
  - 6.2.3 Matters Not Included in the Assessment 75
  - 6.2.4 Environmental and Socio-Economic Effects Analysis 76
  - 6.2.5 Potential Adverse Environmental and Socio-Economic Effects and Standard Mitigation Measures 77
  - 6.2.6 Analysis of Potential Adverse Environmental and Socio-Economic Effects to be Mitigated Through Non-Standard Design and Mitigation Measures78
    - 6.2.6.1 Air Quality and Greenhouse Gas Emissions 78
    - 6.2.6.2 Watercourse crossings 79
    - 6.2.6.3 Noise 82
  - 6.2.7 Cumulative Effects 82
- 6.3 Socio-Economic Matters 84
  - 6.3.1 Infrastructure and Services 84
  - 6.3.2 Employment and Economy 84
- 6.4 Land Matters 85
  - 6.4.1 Land Area and Land Requirements 85
  - 6.4.2 Land Acquisition Process 86

7. Aboriginal Matters 87
- 7.1 Participation of Aboriginal Groups and Aboriginal Engagement 88
- 7.2 Impacts of the Project on Aboriginal Groups 93

8. Economic Feasibility 100
- 8.1 Supply 100
- 8.2 Markets 103
- 8.3 Alternatives 111
- 8.4 Financing 113
- 8.5 Economic Feasibility and Justification 113

9. Toll Principles and Methodology **118**
9.1 Open Season 118
9.2 The Applied-for Toll Methodology 118
9.3 Capacity Allocation and Throughput 121
9.4 Exemptions 123

List of Figures

Figure 2-1 Project Location Map 11
Figure 8-1 CAPP Western Canada Total Crude Supply Forecast Comparison 101
Figure 8-2 Williston Basin Crude Production Forecast Comparison 101
Figure 8-3 Crude Oil Prices Delivered to Montreal 104
Figure 8-4 Price Forecast for Brent and other crudes 105
Figure 8-5 WTI Cushing – Brent FOB 106

List of Tables

Table 7-1 Aboriginal Participants 90

List of Appendices

List of Issues 126
Definitions for Criteria Used to Evaluate the Significance of Effects 127
Rulings 129
NEB Section 58 Order XO-E101-003-2014 Conditions 131
NEB Part IV Order TO-002-2014 Conditions 141

Glossary of Terms, Abbreviations and Units

Act or NEB Act	*National Energy Board Act*
Applicant, Enbridge or the Company	Enbridge Pipelines Inc.
Application	Application to the Board pursuant to section 58 and Part IV of the *National Energy Board Act* for the Line 9B Reversal and Line 9 Capacity Expansion Project
ATP	Application to Participate
Barrel	1 barrel is approximately equal to 0.159 m^3
bbl	Barrel
Board or NEB	National Energy Board
Booster pump	Booster pumps are placed upstream (suction side) of mainline pumps. Their role is to create enough product stream to maintain a consistent pumping (flow and or pressure) capability of mainline pumps
bpd	barrels per day
CD	Cardinal Station
CEA Act 2012	*Canadian Environmental Assessment Act, 2012*
CO_2e	Carbon Dioxide Equivalent
Commenter	Letter of Comment writer. A level of participation available where a Participant is granted the right to file submissions that cannot be tested by the Parties and is not granted the right to cross-examine, ask information requests or provide final argument
CP	Cathodic Protection
Crude oil and equivalent	A collective term used to refer to all grades of crude oil, including conventional light and heavy crude oil, synthetic crude oil, pentanes and heavier hydrocarbons, and bitumen
CSA	Canadian Standards Association
CSA Z245.1	Canadian Standards Association Z245.1, Steel pipe

CSA Z662-11	Canadian Standards Association Z662-11, Oil and Gas Pipeline Systems
CTS	Competitive Toll Settlement
Diluted Bitumen/Dilbit	An oil blend made from bitumen and a diluent, usually condensate, for the purpose of reducing the viscosity of the bitumen to pipeline viscosity and density specifications
DRA	Drag Reducing Agent
Drag Reducing Agent	Drag Reducing Agent is a polymer additive which acts to reduce turbulence in oil pipelines. Using a drag reducing agent can allow for oil to either be pumped through at lower pressures or a larger volume of oil to be pumped without causing a change in pressure
EA	Engineering Assessment
EAE	Enhanced Aboriginal Engagement
EMP	Emergency Management Program
Environmental and Socio-Economic Assessment	A process to identify and mitigate environmental effects likely to arise from a proposed project, prior to major decisions being made
EPP	Environmental Protection Plan
EPR	Emergency Preparedness and Response
ERP	Emergency Response Plan (also referred to as Emergency Procedures Manual)
ESA	Environmental and Socio-Economic Assessment
ESEIA	Enbridge's *Environmental and Socio-Economic Impact Assessment* (dated 29 November 2012) and subsequent updates and related responses to IRs
ESD	Emergency Shutdown
Evidence	Reports, statements, photographs, and other material or information that Participants submit as part of the record. Evidence is used to support a Participant's position on an application

Final argument	A Party's position on the decision the Board should make and the reasons why the evidence supports that position. This can be done orally or in writing
GDP	Gross Domestic Product (of Canada)
GHG	Greenhouse Gases
Heavy Crude Oil	A crude oil with a density ranging from 904 kg/m^3 to 940 kg/m^3
HCA	High Consequence Area
HL	Hilton Station
Hydrotesting	Also referred to as "hydrostatic pressure testing" and is a way to test a pipeline for strength and leaks. The pipeline is filled and pressurized with water, for an amount of time and examined for leaks, ruptures or permanent changes in shape. Hydrotesting is intended to confirm the structural integrity of the piping, and is used as the basis for establishing its maximum operating pressure (set by the regulator)
IJT	International Joint Tariff
ILI	In-line Inspection
IMP	Integrity Management Program
Information request	A written question to ask a Party something about their evidence
Intervenor	A person to whom the Board has granted full or partial participatory rights and obligations in a proceeding. Rights and obligations may or may not include the ability to ask questions, submit evidence, and present final argument
IR	Information Request
km	Kilometre(s)
kt	Kiloton
Light/Medium Crude Oil	A crude oil with a density ranging from 800 kg/m^3 to 903 kg/m^3

Light tight oil	Oil produced via a process in which horizontal drilling is conducted and multi-stage hydraulic fracturing is applied to very low permeability light oil reservoirs
Line 9	Lines 9A and 9B
Line 9 Reversal Phase I Project	Reversal of the approximately 194 km segment of Line 9 between Sarnia Terminal and North Westover Pump Station (Line 9A) pursuant to Order XO-E101-010-2012
Line 9A	The segment of Line 9 between Sarnia Terminal and North Westover Station, in Ontario (approximately 194 km)
Line 9B	The segment of Line 9 from North Westover Station, in Ontario to Montreal Terminal, in Quebec (approximately 639 km)
Line 9B Reversal and Line 9 Capacity Expansion Project	Proposal to reverse a section of Line 9 between North Westover Station, in Ontario to the Montreal Terminal, in Quebec, to concurrently expand the overall annual capacity of Line 9 from Sarnia to Montreal, and to revise the Line 9 Rules and Regulations Tariff
LMCI	Land Matters Consultation Initiative
List of Issues	The list of issues that were considered in this hearing, attached as Appendix I to these Reasons
LTO	Leave to Open
m^3	cubic metre(s)
m^3/d	cubic metre(s) per day
mm	millimetre(s)
Major water crossing/Major watercourse crossings	A watercourse crossing location would be considered major where, at a minimum, an uncontrolled release of product could pose a significant risk to the public or the environment
Mainline pump	Principal pump used to create the required high flow and or pressure for oil transmission
Maximum Operating Pressure	The limit of pressure at which piping or equipment can be operated. The limits may be imposed for many different reasons such as the design specification or physical limits of the materials (pipes, flanges, etc.), the operating characteristics of the line (flow rate, viscosity, etc.), and the

	size of pumps. The term MOP may be used throughout a proceeding but the "Maximum" being referred to is derived by the context the term appears in. The MOP may vary from section to section, elevation to elevation, in a given pipeline. Typically, "maximums" for pipeline systems are determined as being measured from the downstream end of the mainline pump, and all other MOP's for all sections of the downstream mainline pump are based on that initial value
ML	Montreal Terminal
MOC	Management of Change procedures
MOP	Maximum Operating Pressure
NEB Act or the Act	*National Energy Board Act*
Notice of motion	Pursuant to section 35 of the *National Energy Board Rules of Practice and Procedure, 1995*, a question of procedure or substance asked to the Board either in writing or orally
NPS	Nominal Pipe Size (in inches)
NTSB Report	Where not otherwise specified, this is the report by the US National Transportation Safety Board (NTSB) regarding the Enbridge Energy, Limited Partnership Line 6B spill at marshall, Michigan in July 2010 (the Marshall Incident)
NW	North Westover Station
OD	Outside Diameter
O&M	Operations and Maintenance activities
OPR	*National Energy Board Onshore Pipeline Regulations*
OPUAR	*Oil Pipeline Uniform Accounting Regulations*
PAP	Public Awareness Program
Participants	Persons who have been granted rights to participate in the Board's proceeding. These include the Applicant, Intervenors and Commenters. Each of these Participant categories have certain participatory rights and obligations
Parties	Includes the Applicant and the Intervenors though does not include Commenters

PFP	Participant Funding Program
ppm	parts per million
Process Advisor	Board staff who assist the public and Aboriginal groups as well as Parties understand and participate in the hearing
Project	Line 9B Reversal and Line 9 Capacity Expansion Project
Project Sites	The Project involves construction activity at six Project Sites: Sarnia Terminal (SA); North Westover Station (NW); Hilton Station (HL); Cardinal Station (CD); Terrebonne Station (TB); and, the Montreal Terminal (ML)
Reply evidence	Additional information filed in reply to evidence filed by other Participants
RoW	Right-of-way
RPR	Rupture Pressure Ratio
SA	Sarnia Terminal
SARA	*Species at Risk Act*
SCC	Stress Corrosion Cracking
SMYS	Specified Minimum Yield Strength
TB	Terrebonne Station
TSA	Transportation Service Agreement
TWS	Temporary Work Space
WCSB	Western Canada Sedimentary Basin
WTI	West Texas Intermediate

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (NEB Act) and the regulations made thereunder;

AND IN THE MATTER OF an Application dated 29 November 2012, as amended, to the National Energy Board (NEB) made by Enbridge Pipelines Inc. (Enbridge) under file OF-Fac-Oil-E101-2012-10 02 for the Line 9B Reversal and Line 9 Capacity Expansion Project (Project) which requested the following relief:

a) an order, pursuant to section 58 of the NEB Act, exempting the Project from the provisions of paragraph 30(1)(b) and sections 31, 33 and 47 of the NEB Act;
b) approval under Part IV of the NEB Act for the revised Line 9 Rules and Regulations Tariff;
c) an order, pursuant to subsection 129(1.1) of the NEB Act, exempting Enbridge from the requirement to keep the system of accounts for the Project prescribed by paragraph 5(1)(c) of the *Oil Pipeline Uniform Accounting Regulations*; and
d) an order exempting Enbridge from the filing requirements specified in Guide BB of the NEB Filing Manual;

where the Project is comprised of the following:

a) the additions and modifications at the Project Sites and resulting necessary changes to related procedures and commitments required to reverse crude oil flow between North Westover, Ontario and Montreal, Quebec;
b) the additions and modifications at the Project Sites and resulting necessary changes to related procedures and commitments to enable an increase in annual capacity from Sarnia, Ontario to Montreal, Quebec; and
c) the revision to the Line 9 Rules and Regulations Tariff to allow for the transportation of heavy crude;

AND IN THE MATTER OF National Energy Board Hearing Order OH-002-2013 dated 19 February 2013.

HEARD by way of written submissions and orally in Montreal, Quebec on 8-11 October 2013 and in Toronto, Ontario on 16-18 October 2013;

BEFORE:

L. Mercier	Presiding Member
M. Richmond	Member
J. Gauthier	Member

APPEARANCES:

Applicant

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M. Fowke	
K. Millar	

Aboriginal Participants

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P. Seaman	
S. A. Smith	Chippewas of the Thames First Nation
P. Seaman	
Chief C. Phillips	Mohawk Council of Kahnawà:ke
F. Walsh	
P. Ragaz	
C. Lester	Individual

Associations

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R. McCrae	
D. Tsingakis	Association Industrielle de l'Est de Montréal
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N. Schultz	
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E. Pascariu	
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D. Anderson	Durham Citizens Lobby for Environmental Awareness and Responsibility Inc. (DurhamCLEAR)

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G. Rempe	City of Toronto

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J. Léger	
C. Powell	

WRITTEN REPLY ARGUMENT:

K. Millar	Enbridge Pipelines Inc.

Chapter 1

Disposition

The National Energy Board (NEB or Board) has considered the evidence and submissions made by all Participants in the OH-002-2013 proceeding. The Board's views and conclusions on matters that fall within the scope of the requested authorizations are contained in the following chapters, and constitute the Board's Reasons for Decision (Reasons) in respect of the OH-002-2013 proceeding concerning Enbridge Pipelines Inc.'s (Enbridge) application for the Line 9B Reversal and Line 9 Capacity Expansion Project (Project).

In this proceeding, Enbridge requested an Order under Part III of the *National Energy Board Act* (NEB Act) to reverse the segment of Line 9, called Line 9B, between North Westover, Ontario and Montreal, Quebec, in addition to an expansion of the entire Line 9 capacity from Sarnia, Ontario to Montreal, Quebec. Enbridge also requested a revision pursuant to Part IV of the NEB Act to the Line 9 Rules and Regulations Tariff to allow for the transportation of heavy crude. Finally, Enbridge requested exemptions from certain filing requirements under the *Oil Pipeline Uniform Accounting Regulations* (OPUAR) and the Board's Filing Manual. This is the Application that the Board considered in its assessment of the Project.

On 27 July 2012, the Board previously approved the reversal of a segment of Line 9 to flow eastward between Sarnia and North Westover, Ontario.[1] The current westward flow of the Line 9B segment has been in place since 1999. The requested reversal in flow direction from west to east for Line 9B would see the entire Line 9 revert back to the direction that was originally approved by the Board in 1975 and the direction in which Line 9 flowed for 23 years (between 1976 and 1999).

The Board's Process

In making its decision, the Board relies on the facts that are established to its satisfaction through the hearing process, and also proceeds in compliance with the principles of natural justice.

The Board notes that Enbridge's Line 9 has been subject to NEB oversight, compliance and legislative requirements since it was originally approved in 1975. The potential environmental effects of the currently operating Line 9 facilities are incorporated in the Board's ongoing regulation and compliance verification activities, including all related engineering, integrity, emergency response and environmental aspects under the Board's jurisdiction. The Board's ongoing compliance verification activities serve to promote safe operations though audits, inspections and ongoing monitoring of a company's compliance and corrective actions, if required. The Board further notes that the management system details pertaining to the potential environmental effects and emergency response plans related to accidents and malfunctions is contained in Enbridge's existing Emergency Management Program (EMP) and Environmental

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[1] OH-005-2011 – NEB Letter Decision, Enbridge Pipelines Inc. Line 9 Reversal Phase I Project.

Protection Program (EPP) as required by sections 32 and 48, respectively, of the *National Energy Board Onshore Pipeline Regulations* (OPR).

In this proceeding the Board received 178 applications to participate (ATP) and provided the opportunity for 171 Participants to provide their views regarding the Project. From these Participants, the Board primarily heard concerns regarding pipeline safety and integrity, as well as concerns regarding the environmental impacts of potential spills from the Line 9 pipeline. Some concerns were raised that are not within the Board's mandate to regulate, such as oilsands development, energy policy, upstream greenhouse gasses (GHGs) and GHGs related to the end use of crude oil.

The Board is aware that throughout this proceeding, Participant submissions were informed by the current social context in which this Project is being considered. The Board is mindful of an increased awareness and concern regarding projects under its jurisdiction, including this Project which involves the modification and continued operation of a pipeline that passes through large population centers, rural communities and areas of environmental sensitivity. While issue-specific discussion is provided in the chapters that follow, this overall social context provides insight into the concerns expressed by Participants.

Despite the longstanding presence of Line 9 in Ontario and Quebec, this proceeding raised local awareness of this currently operating NEB-regulated pipeline, the history of which is more fully described in Chapter 2 of these Reasons. Adding to this awareness were major incidents such as the train derailment at Lac-Mégantic, Quebec in July 2013 and the Enbridge Energy, Limited Partnership Line 6B spill at Marshall, Michigan in July 2010 (Marshall Incident) to which frequent reference was made. Concern arising from these events formed the basis of some submissions regarding not only the Project, but about pipeline safety in general.

In the aftermath of the Lac-Mégantic incident, the Board heard from Participants about the need for Enbridge's consultation and communication with affected communities to be transparent, genuine, ongoing, structured, collaborative and consistent. This was of particular concern for municipalities with respect to emergency response plans. These issues are discussed in Chapters 3 and 5 of these Reasons.

With respect to the Marshall Incident, where significant volumes of oil from a ruptured pipeline eventually spilled into the Kalamazoo River in Michigan, Participants highlighted their concern for assurance that waterways, particularly those that supply drinking water, are safe and remain safe from the risk of potential pipeline spills. More generally, precautions for environmentally sensitive areas were also raised. Both of these topics are addressed in Chapters 5 and 6 of these Reasons.

Since Line 9B passes through some of the most densely populated areas of Canada, the concerns that were brought to light or reinforced by these two incidents were understandably heightened in many of the submissions the Board received from Participants. In addition to references to these incidents, an additional concern expressed by Participants related to the risk of the potential effects of a pipeline leak or rupture in proximity to waterways and sources of drinking water.

In that regard, the Board heard concerns about the current and potential locations for valves along Line 9 as a means of limiting the volume of a spill and its potential effects.

In fulfilling its mandate the Board estimates the overall public good a project may create, estimates its potential negative aspects, weighs its various impacts, and makes a decision which it determines to be in the public interest. Under Part III of the NEB Act, in making a decision of whether a project is in the public interest, the Board considers the integration of economic, environmental and social interests within the context of that project.

Under Part IV of the NEB Act, the Board considers whether the resulting tolls would be just and reasonable, and whether the toll methodology would result in any unjust discrimination in tolls, service or facilities. For an oil pipeline the Board must also be satisfied that the pipeline would receive, transport and deliver all oil offered to it for transmission in accordance with a pipeline's common carrier obligations under section 71 of the NEB Act. The NEB Filing Manual[2] provides additional information on what is considered by the Board when assessing an application.

The Board's Decision

Having considered and weighed all of the evidence before it, the Board has approved the Project subject to a number of conditions and directives contained in the attached Orders or set out in these Reasons, which the Board has imposed to address important concerns. The majority of these conditions and directives address concerns related to the capacity expansion component of the Application. Overall, the Board had less concern regarding the applied-for flow reversal or revision to the Line 9 Rules and Regulations Tariff. The Board has not granted Enbridge's request for exemption from the need to apply for leave to open (LTO) as required by section 47 of the NEB Act. Enbridge will have to apply separately for LTO and the Board has imposed a number of conditions and requirements that Enbridge must fulfill before applying for LTO.

The Board takes the commitments made by applicants seriously and throughout its deliberations the Board carefully considered all commitments made by Enbridge in this proceeding. For these reasons, the Board has imposed **Conditions 2, 3 and 5** in the Part III Order XO-E101-003-2014 which collectively require Enbridge to fulfil the commitments it made throughout the proceeding and to establish a Commitments Tracking Table. Such commitments factored into the Board's decision concerning the Project and the Board relied on them in instances where it may have otherwise imposed a condition.

Conclusion

The Board has considered the Application and has issued Orders, the effect of which is to approve the Project, subject to the conditions and requirements established by the Board and set out in the Orders, as well as in these Reasons. Please see the associated Orders outlining the specifics of the Project and approvals.

Pursuant to section 58 of the NEB Act, the Board has issued Order XO-E101-003-2014 (Part III Order), and grants Enbridge an exemption from the provisions of sections 31 and 33 of the

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[2] NEB Filing Manual (ISSN 1718-4711) is available at www.neb-one.gc.ca

NEB Act. The Board does not grant Enbridge an exemption from the provisions of paragraph 30(1)(b) or section 47 of the NEB Act. Accordingly, Enbridge is required to apply for LTO prior to placing the Project into operation.

Pursuant to Part IV of the NEB Act, the Board has also issued Order TO-002-2014, the effect of which is to approve the applied-for revised Line 9 Rules and Regulations Tariff. The Board has also granted the requested exemption from certain filing requirements under the OPUAR and Guide BB of the Board's Filing Manual, subject to certain conditions.

The Board is of the view that approving the Project is in the public interest and is consistent with the requirements of Part III and Part IV of the NEB Act. In approving Enbridge's Application, the Board has imposed conditions that will enhance current and ongoing pipeline integrity, safety and environmental protection measures to which Line 9 is already subject. The Board's decision enables Enbridge to react to market forces and provide benefits to Canadians, while at the same time implementing the Project in a safe and environmentally sensitive manner. It is now up to Enbridge to fulfill its commitments and satisfy the Board's requirements.

L Mercier

L. Mercier
Presiding Member

Michael Richmond

M. Richmond
Member

J. Gauthier
Member

Calgary, Alberta
March 2014

Chapter 2

Introduction

2.1 Background

2.1.1 The Board's Mandate and Oversight

During the course of this proceeding the Board heard a variety of comments with respect to its mandate, as well as the Board's role concerning pipeline safety and environmental assessment.

The NEB is an independent federal agency established in 1959 and reports to Parliament through the Minister of Natural Resources. The Board is a quasi-judicial decision-maker with the rights and privileges of a superior court and its decisions are enforceable at law.

The NEB's main responsibilities include regulating the construction and operation of interprovincial and international oil and gas pipelines, international power lines and designated interprovincial power lines. The NEB also regulates the tolls and tariffs for pipelines under its jurisdiction. With respect to the specific energy commodities, the NEB regulates the export of natural gas, oil, natural gas liquids and electricity, and the import of natural gas. In an advisory function, the NEB publishes periodic assessments to inform Canadians on trends, events and issues which may affect Canadian energy markets. Additionally, the NEB regulates oil and gas exploration and development on frontier lands and offshore areas not covered by provincial or federal management agreements. The NEB's regulatory oversight extends over approximately 71,000 kilometres of pipeline that crisscross most of Canada, and approximately 1,400 kilometres of international power lines. The NEB does not have jurisdiction over energy exploration and production within provincial boundaries, Alberta's oil sands, for example.

The NEB's purpose is to promote safety and security, environmental protection, and efficient energy infrastructure and markets in the Canadian public interest within the mandate set by Parliament. The Board's priorities are the safety of the Canadian public, the safety of the people who build and operate NEB-regulated pipeline facilities, and the protection of the environment. The NEB holds its regulated companies accountable for results in the public interest by using a rigorous compliance monitoring and enforcement program.

The Board's expectations regarding pipeline operation are defined in its regulations, including the OPR, and associated guidance materials. The NEB also works with the Canadian Standards Association (CSA) to establish safety regulations and technical standards for federally-regulated pipelines.

Since its inception in 1959, the NEB has always considered the environment when making regulatory decisions. The NEB's environmental responsibility includes seeking to ensure environmental protection during planning, construction, operation and abandonment of facilities within its jurisdiction. The NEB has a mandate for environmental protection as a component of the public interest and conducts environmental assessments as appropriate for applications that come before it.

The NEB has Environmental, Socio-Economic, Lands and Engagement Specialists deployed to teams throughout its organization. These specialists conduct environmental and socio-economic assessments, environmental inspections, audits of environmental management systems, lands administration, and are involved with landowner complaint resolution. When making its decisions, and depending on the nature of the application before it, the NEB may take into consideration environmental concerns related to air, land and water pollution, disturbance of renewable and non-renewable resources, the integrity of natural habitats, the disruption of land and resource use, and the protection of landowner rights.

The NEB also has Engineering, Emergency Management, Safety and Security Specialists dedicated to confirming that the energy infrastructure regulated by the NEB remains safe and secure. These specialists conduct engineering and integrity assessment reviews, operational and safety inspections, audits of emergency management systems, project-specific and system-wide investigations, and are also involved with complaint resolution. In support of the Board and its mandate, NEB Specialists uphold the four strategic pillars of worker safety, damage prevention, integrity of installations, and emergency preparedness and response.

If a project is approved, the NEB expects the regulated company to protect the environment and public health and safety. The NEB confirms this by auditing and inspecting the company's construction activities, maintenance and monitoring procedures during the operation of the pipeline and its procedures during abandonment. The NEB enforces regulatory requirements in order to achieve compliance, deter future non-compliance, and prevent harm by using the most appropriate tool or tools available including:

- NEB Audits and Inspections of company operations;
- Inspection Officer Orders;
- Board Orders (related to safety and environmental protection issues);
- Board Letters or Directives (related to safety and environmental protection issues); and
- Corrective Action Plans related to the above.

Recently, the *Administrative Monetary Penalties Regulations (National Energy Board)* came into force, which allow the Board to issue financial penalties to companies, third-party contractors and individuals for violations of safety and environmental protection legislation within the Board's jurisdiction.

Monitoring compliance enables enforcement, promotes continual improvement and facilitates an improved understanding of a regulated company's systems and practices. Compliance can focus on commitments made during the application stage and set out as the terms and conditions of approval, as well as that which is being carried out during project operations. Additionally, the NEB continues ongoing, periodic reviews of the manuals and reports of regulated companies, including those related to environmental protection. The NEB also investigates compliance as a result of complaints, reports of high-risk activity or incidents.

In order to improve access to safety and environmental information to all Canadians, as of September 2011, the NEB proactively posts information on its compliance and enforcement activities with the goal of providing all relevant information related to its compliance and enforcement actions, in a manner that is clear and accessible (subject to confidentiality and security considerations).[3]

The NEB requires all of its regulated pipeline companies to anticipate, prevent, manage and mitigate potentially dangerous conditions associated with their facilities. All incidents are preventable and the NEB expects the companies it regulates to strive for zero incidents. Any release of product is considered unacceptable by the Board. When a violation or an unsafe condition is detected, the NEB expects immediate correction and an assessment of the root causes in order to prevent the issue from happening again. Failure to address a violation or unsafe condition can result in further NEB sanction, such as suspension of operation. The NEB will verify that a company conducts an adequate and appropriate clean-up and remediation of any environmental effects resulting from the incident.

Each NEB-regulated company, including Enbridge, must maintain an up-to-date emergency procedure manual outlining the company emergency management procedures to be followed during an incident. The procedures must address emergency management, environmental protection, and worker and public safety. All operating pipelines such as Line 9 must have this plan on file with the NEB and the Canadian Transportation Safety Board (TSB), and it must be updated on a regular and on-going basis. Companies are responsible for reporting all incidents to the TSB and the NEB and for implementing their emergency response plan.

A cornerstone of preventing incidents is the development of a strong safety culture. The Board is convinced that proactive safety management and a culture of safety will reduce incidents that result in fatalities and injuries, the impact of incidents on the environment and property damage resulting from incidents. Safety culture happens when everybody believes in it, talks about it, promotes it and lives it.

The Board requires NEB-regulated companies to develop and implement management systems in accordance with the OPR that set out policies, processes and procedures related to managing the safety of people and the protection of the environment. Management system components include processes to:

- set regulated company policies and performance objectives;
- proactively identify hazards, evaluate risk and identify mitigation;
- establish clear responsibilities and accountabilities;
- have trained and competent personnel; and
- manage documentation, reporting, evaluation and continual improvement.

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[3] The NEB has an obligation to protect information and documents as required by law and existing security policies. Relevant laws and policies include, but are not limited to, the National Energy Board Act (sections 16.1 and 16.2), Security Organization and Administration Standard, Privacy Act, and Access to Information Act.

In so doing, regulated companies must identify what can go wrong, build systems that will take preventative measures, and then measure the effectiveness of those systems so there is continual improvement. Effective management systems provide a strong foundation for a pervasive culture of safety, forcefully affirmed by the organization's leadership, rigorously documented in writing, known to all employees involved in safety and environmental protection, and consistently implemented in the field.

Further information regarding the NEB and its mandate can be found at www.neb-one.gc.ca. The NEB Filing Manual (also available at www.neb-one.gc.ca) provides additional information on what is considered by the Board when assessing an application.

2.1.2 The History of Line 9

As a result of the 1973 oil embargo imposed by the Organization of Petroleum Exporting Countries (OPEC), the Government of Canada became concerned with the vulnerability of eastern Canadian oil refineries. Montreal refineries at that time depended on overseas crude oil delivered either directly by vessel or via the Portland-Montreal pipeline system. At that time, the pipeline systems in Canada could not ship directly to eastern Canadian refineries, and could only deliver crude oil either through the Trans Mountain Pipe Line Company Ltd. (Trans Mountain) pipeline system to Vancouver, British Columbia and loading vessels which would transit the Panama Canal, or seasonally by tanker from Ontario ports through the St. Lawrence Seaway to Montreal.

Interprovincial Pipe Line Inc. (IPL), whose pipeline system travelled from Edmonton, Alberta to the Toronto, Ontario area, was asked to consider an extension of its system to serve Montreal refineries and to permit Quebec City and Atlantic refiners, if circumstances warranted, to use existing dock facilities in Montreal to load vessels with Canadian crude oil for delivery further east. On 8 April 1975, the Government of Canada entered into an agreement with IPL to construct an extension from Sarnia to Montreal (Montreal Extension) in order to transport crude oil from western sources to eastern refineries. In this agreement, the Government of Canada guaranteed to meet any financial loss which might result from low throughputs. This agreement had a term of 20 years from the date when the Board granted LTO for the Montreal Extension. The Montreal Extension, which is now known as Line 9, was opened on 4 June 1976 and had a throughput capacity slightly in excess of 50,000 cubic metres per day (m^3/d) or 315,000 barrels per day (bpd).

On 25 February 1977, the Government of Canada and IPL entered into an additional agreement which provided the Government of Canada an option to purchase Line 9. On 4 June 1996, IPL announced that it had reached an agreement with the Government of Canada whereby IPL would continue to own and operate Line 9, and the Government of Canada was released from its rights and obligations under the previous agreements.

On 1 May 1997, IPL applied to the Board to reverse the direction of flow in Line 9 so that crude oil could be transported in a westward direction from Montreal to major refining centres in Ontario. The capacity of the reversed Line 9 would be 38,160 m^3/d (240,000 bpd). Following the Board's OH-02-97 proceeding and pursuant to Order XO-J1-34-97, the flow of Line 9 was reversed to a westward direction in 1999.

As the current owner and operator of Line 9, Enbridge applied to the Board on 8 August 2011, to reverse an approximately 194 km segment of Line 9 between the Sarnia Terminal and the North Westover Station, in Ontario, to accommodate a request from Imperial Oil's Nanticoke Refinery near Westover (Line 9 Reversal Phase I Project). In the OH-005-2011 proceeding, on 27 July 2012, the Board approved the Line 9 Reversal Phase I Project (reinstating an eastward direction of flow) pursuant to Order XO-E101-010-2012. The Line 9 Reversal Phase 1 Project was completed and opened on 1 August 2013.

Currently, Line 9A and Line 9B transport crude oil in an eastward and westward direction, respectively, into North Westover, taking deliveries from both the Montreal Terminal and the Sarnia Terminal to Imperial Oil's Nanticoke Refinery.

2.2 The Application and the Board's Assessment

On 29 November 2012, Enbridge filed the Application detailing its request to reverse the 639 km segment of Line 9 from North Westover, Ontario to Montreal, Quebec (Line 9B), and to increase the annual capacity of the entire Line 9 from 240,000 bpd to approximately 300,000 bpd through the introduction of a drag reducing agent (DRA), while maintaining a maximum design capacity of 333,333 bpd, pursuant to section 58 (Part III) of the NEB Act. The Application also included a request to revise the Line 9 Rules and Regulations Tariff to allow for the transportation of heavy crude, pursuant to Part IV of the NEB Act. Enbridge also requested exemption from the provisions of paragraph 30(1)(b) and section 31, 33 and 47 of the NEB Act, as well as an exemption from paragraph 5(1)(c) of the OPUAR and Guide BB of the Board's Filing Manual.

The Project is defined as the additions and modifications and resulting necessary changes to related procedures and commitments required to allow the reversal of crude oil flow within Line 9B, which is a segment of the existing Line 9 pipeline already in operation, as well as an annual capacity increase and a change to the Rules and Regulations Tariff to allow for the transportation of heavy crude for all of Line 9.[4] These additions and modifications are related to the pipeline pumps, piping and valves, receiving traps, densitometers, DRA injection pumps, and building footprint modifications at the six Project Sites: Sarnia Terminal (SA); North Westover Station (NW); Hilton Station (HL); Cardinal Station (CD); Terrebonne Station (TB); and, the Montreal Terminal (ML).

The physical activities associated with these additions and modifications include construction, operation, maintenance and foreseeable changes, and reclamation, including physical works described in greater detail in the Application. The integrity of the existing pipeline between the six Project Sites was also reviewed by the Board in this proceeding as it related to the applied-for change in flow direction, increase in annual capacity, and transportation of heavy crude. Enbridge explained that the changes proposed in the Application carry with them a minor increase in risk in the likelihood of failure relative to the current operation of the pipeline.

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[4] For a complete description of the Project, please see either the Hearing Order OH-002-2013 or Enbridge's Application, as amended.

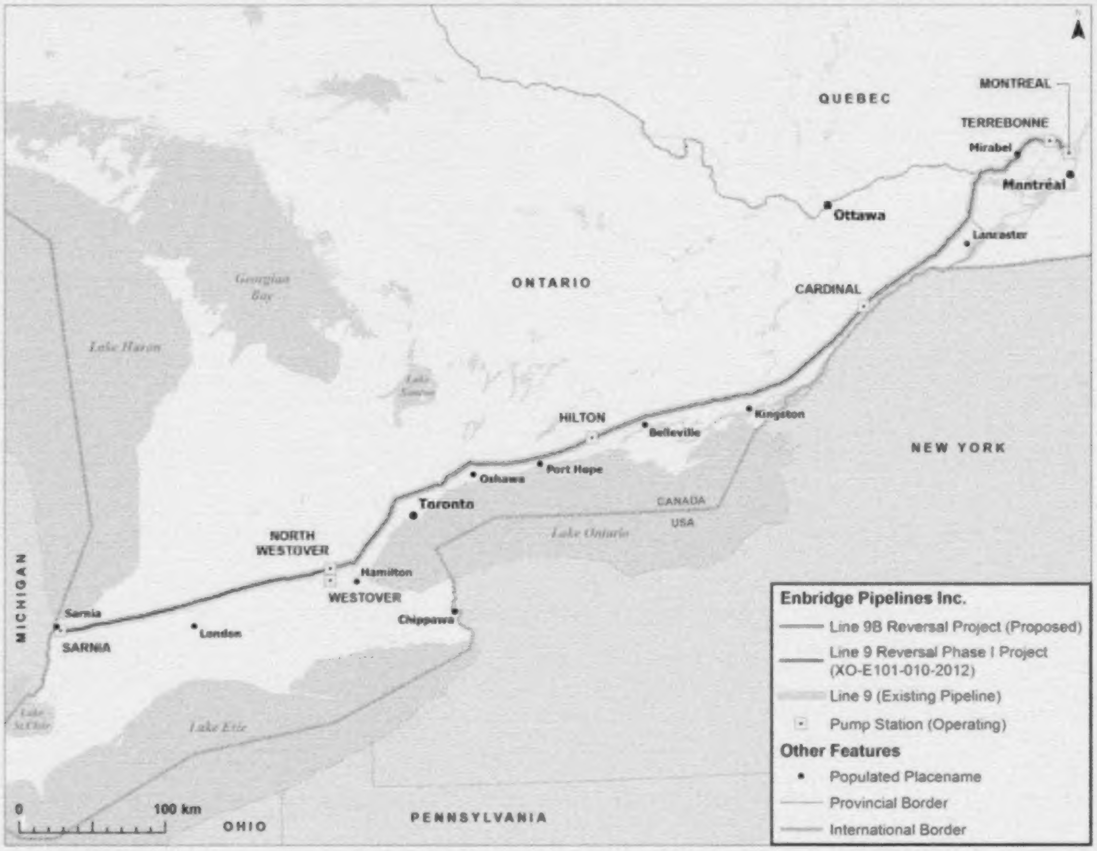
The Board assessed the incremental increased risk of failure, as well as the incremental potential effects of such a failure occurring, as compared to the baseline of current Line 9 operation. As described in the Application, the operating pressures on Line 9 would not exceed those previously approved (5 March 1999 Leave to Open (File No: 3400-E101-86)).

In its Application, Enbridge stated that Project construction would occur on previously disturbed lands, existing Enbridge facilities and surface leases. Temporary work space (TWS) located outside of the Enbridge property boundary would be required at ML. No additional ground disturbances are planned along the existing right-of-way (RoW) itself. Figure 2-1 provides an overview of the proposed Project facilities and existing pipeline route.

Based on the nature of the Application, the Board did not conduct a full review or audit of the current and on-going operations and maintenance (O&M) work along Line 9, Enbridge's existing integrity management program (IMP), nor its existing emergency response and environmental management systems. Review of these aspects, and others, are carried out through compliance and verification activities regularly undertaken by the NEB. However, the Board did consider these matters to the extent that the incremental increased risk of failure or related incremental potential effects of such a failure occurring would be relevant. The submissions of Participants regarding the status of the existing Line 9 provided context in which to assess these incremental changes. Where the Board considered it appropriate to do so, it has imposed certain conditions in the Part III Order XO-E101-003-2014 to address the associated incremental risks.

It should be noted that Enbridge has implemented, and would be required to continue to implement, its existing integrity and environmental management practices along the entirety of Line 9 and associated facilities regardless of the Application. This includes monitoring and updating practices based on current environmental conditions, maintenance and repair work as required (including ground disturbance) and also line patrols on the ground or by air.

Figure 2-1 Project Location Map


MONTREAL
QUEBEC
TERREBONNE
Mirabel
Montréal
Ottawa
Lancaster
ONTARIO
CARDINAL
Georgian Bay
Lake Huron
Lake Simcoe
HILTON
Belleville
Kingston
NEW YORK
Oshawa
Port Hope
Toronto
CANADA
USA
Lake Ontario
NORTH WESTOVER
Hamilton
WESTOVER
Chippawa
MICHIGAN
Sarnia
SARNIA
London
Lake St Clair
Lake Erie
0
100 km
OHIO
PENNSYLVANIA
Enbridge Pipelines Inc.
Line 9B Reversal Project (Proposed)
Line 9 Reversal Phase I Project (XO-E101-010-2012)
Line 9 (Existing Pipeline)
Pump Station (Operating)
Other Features
Populated Placename
Provincial Border
International Border

2.3 OH-002-2013 Hearing

2.3.1 Hearing Order and Hearing Process

The public hearing process plays an important role in informing the Board so that it is capable of making decisions in the Canadian public interest. During the hearing process, Participants are given the opportunity to voice their opinions on a proposed project. The process is guided by the *National Energy Board Rules of Practice and Procedure, 1995* available on the NEB website (www.neb-one.gc.ca) and related procedural directives issued by the Board. The purpose of a public hearing is for the Board to gather and review information that is relevant and directly related to the project being assessed. In order to facilitate participation, the Board assigns a Process Advisor to public hearings to answer questions about the Board's process.

The Board is bound as well by the principles of natural justice under supervision of the courts of law. These principles have been developed by the courts over centuries, and apply to public bodies making a decision that affects a person's rights, privileges or interests, other than a purely legislative decision. Accordingly, the Board is legally required to adhere to these principles in carrying out its decision-making authority.

On 11 October 2012, the Board received a Pre-Application Information filing regarding the reversal of Line 9B. The Application for the Project was received on 29 November 2012.

On 19 December 2012, the Board determined that the Application was complete enough to proceed to assessment. On 19 February 2013, the Board issued the OH-002-2013 Hearing Order, which established the process for the Board's consideration of the Application, consisting of written evidence and oral final argument.

The Hearing Order included a List of Issues that the Board proposed for consideration during its assessment of the Application. The List of Issues was revised after a comment period, and the final List of Issues was released on 4 April 2013 with Procedural Update No. 1 and is found at Appendix I of these Reasons. The Board considered the submissions received during the course of this proceeding that were relevant to the List of Issues.

To assist interested persons with the OH-002-2013 hearing process, the Board held seven information sessions for people with an interest in participating in the hearing. Any member of the public was welcome to attend. Sessions in French and English were held 19-21 February 2013 in Hamilton, Toronto and Montreal. Additional sessions were requested by members of the public and were held 3-9 April 2013 in Kingston, Rigaud, Ajax, and Longueil. The purpose of these sessions was to provide a general overview of the Board's hearing process and how to effectively participate. Board Staff were also available to provide information about the NEB's role in promoting safety and environmental protection and to answer questions regarding the Board's Participant Funding Program (PFP).

Additional meetings associated with the Board's Enhanced Aboriginal Engagement (EAE) process are detailed in Chapter 7 of these Reasons.

On 4 April 2013, the Board provided the ATP form which asked interested persons to explain how they are directly affected by the proposed Project or in possession of relevant information or expertise. On the ATP form interested persons indicated whether they wanted to participate as an Intervenor or as a Commenter. The deadline for submitting the completed ATP form was 19 April 2013.

On 22 May 2013, the Board released Procedural Update No. 2 establishing the List of Parties (comprised of Enbridge and Intervenors) and the List of Commenters for the proceeding. The Parties and Commenters are collectively referred to as Participants. In its Rulings Nos. 3 and 22 the Board also provided the opportunity for additional interested persons to be Participants in this proceeding.

The Board received ATP forms from 178 interested persons. Of the 178 applications, 171 Participants were provided the opportunity to provide their views. Of these, 160 ATPs were granted as requested and 11 persons who requested Intervenor status were instead granted the opportunity to submit a Letter of Comment. Seven persons were not granted standing. As a result, there were 60 Intervenors and 111 Commenters for the OH-002-2013 proceeding.

A fact sheet was included with Procedural Update No. 2 which described the Board's mandate and jurisdiction under the NEB Act, as well as what the Board considers when it exercises its authority under the NEB Act in the Canadian public interest.

On 16 August 2013, the Board released Procedural Update No. 3 indicating it would convene the oral final argument portion of this proceeding on 8 October 2013. On 30 September 2013, the Board released Procedural Update No. 4 providing Parties with the Order of Appearances, a list of potential draft conditions, and an updated Exhibit List. Oral final argument was held during 8-11 October 2013 in Montreal, Quebec, and during 16-18 October 2013 in Toronto, Ontario.

Of the 60 Intervenors, 45 filed written evidence in the proceeding. Enbridge and 40 Intervenors provided oral final argument, and 11 Intervenors provided written final argument. The Board also received 76 Letters of Comment.

The Board undertakes many activities aimed at facilitating effective public participation but notes that, ultimately, it is up to Participants to ensure their involvement is effective. Many Intervenors took the opportunity to pose meaningful and helpful Information Requests (IRs), and demonstrated great effort in their evidentiary submissions and final argument.

During the oral portion of the hearing, the Board's Montreal and Toronto hearing dates were open to the public, and audio was streamed live via the Board's website. Most days were well attended, not only by Participants, but by interested members of the public and media. As the Board noted in its Procedural Update No. 4, it has a longstanding tradition of conducting its hearings and associated process in a courteous, safe, respectful and civil manner. The Board expects Participants and other members of the public attending its hearings to act with courtesy and respect during proceedings. Unfortunately, this was not always the case.

The Board takes seriously the unfortunate instances during which Parties were interrupted by individuals attending the hearing at both venues. Ultimately, this lack of decorum and disruptive conduct resulted in the final day of oral argument being cancelled, due to concerns with respect to the security of attendees. Pursuant to Procedural Update No. 5, Enbridge's reply argument was made by way of written submission on 25 October 2013.

The Board appreciates the efforts and participation of all Participants, and has considered all submissions that have been made. Selected concerns raised by Participants are highlighted throughout these Reasons.

The regulatory documents on file in the OH-002-2013 proceeding are available on the Board's website, www.neb-one.gc.ca.

A table listing motions made to the Board and the Board's rulings on these motions is attached as Appendix III. The conditions listed in Orders XO-E101-003-2014 and TO-002-2014 are presented in Appendices IV and V respectively. Other than in Chapter 9, when an Order is mentioned in these Reasons it refers to the Part III Order, XO-E101-003-2014.

2.3.2 Participant Funding Program

The NEB administers a Participant Funding Program (PFP) which provides financial assistance to support the timely and meaningful engagement of individuals, Aboriginal groups, landowners, incorporated non-industry not-for-profit organizations, or other interest groups who seek to intervene in the NEB's oral hearing process for facilities applications.

On 1 February 2013, the NEB indicated that $200,000 would be available under its PFP for interested persons to participate in the regulatory review process for the Project. In its final report regarding the allocation of PFP funds,[5] PFP recipients in this proceeding were awarded $299,315.

The following individuals, Aboriginal groups or associations applied for and were allocated participant funding:

- Ontario Pipeline Landowners Association
- Équiterre (Coalition)
- Aamjiwnaang First Nation
- Chippewa of the Thames First Nation
- Les Citoyens au Courant
- DurhamCLEAR
- Paul Kuebler
- Mississaugas of New Credit First Nation
- Conseil du patronat du Québec
- Algonquin to Adirondacks Collaborative
- Great Lakes and St. Lawrence Cities Initiative

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[5] PFP Funding Review Committee Report – Allocation of Funds for Participation in the Public Hearing for the Enbridge Pipelines Inc. Line 9B Reversal and Line 9 Capacity Expansion Project, dated 2 October 2013.

Chapter 3

Public Participation and Engagement

3.1 Board Expectations for Company Consultation Programs

Effective public participation facilitates understanding between stakeholders, improves decisions (for example, by bringing forward local knowledge and experience, introducing different perspectives, and/or by identifying key issues early), and acknowledges the desire of interested persons to participate in decisions which affect them. The Board considers public participation to be a fundamental component during each phase in the lifecycle of a project, including project design, construction, O&M, and abandonment, in order to address potential impacts of a project. This chapter addresses Enbridge's Consultation Program with the public and government stakeholders. Enbridge's Aboriginal engagement activities are discussed in Chapter 7 of these Reasons.

The Board requires companies to undertake an appropriate level of consultation with potentially affected groups and individuals, commensurate with the setting, nature and magnitude of a proposed project. Depending on the nature of the project, that could mean carrying out a very extensive consultation program or a very simple consultation program such as notifying a single landowner. The Board's expectations for Company Consultation Programs are stated in Chapter 3 of the NEB's Filing Manual. In particular, the Board expects the following information to be filed for a project:

- Principles and goals of the consultation program;
- Design details of the consultation program; and
- Outcome of consultation implementation.

3.2 Enbridge's Consultation Program

3.2.1 Consultation with Landowners, Residents, Associations and Other Potentially Affected Persons

Views of Enbridge

Enbridge submitted that its Corporate Social Responsibility Policy recognizes the value and importance of public consultation and stakeholder engagement as a key component of sound business practice.

In developing its consultation plan, Enbridge submitted that it took the following into account that:

- no new permanent land rights would need to be acquired for the Project;
- with the exception of some TWS required at ML, all work would take place within existing Enbridge RoW and facility sites; and

- minimal construction work would be required at Enbridge's existing facilities.

Enbridge submitted that for the majority of stakeholders, the reversal would have no noticeable impact since it involves reversing the flow on an existing pipeline, and that any impacts arising from construction (noise, dust, traffic, and disruptions due to equipment movement) are expected to be temporary and minor in nature.

Enbridge designed and implemented a Project-specific consultation program to ensure that all potentially affected and interested stakeholders were engaged early and were provided with detailed Project information in a timely manner. Enbridge explained that it also took into account the wider interest received for the Line 9 Reversal Phase I Project in the design of its consultation program. To that end, starting in May 2012, Enbridge undertook a number of consultation efforts, such as open houses, mailouts and meetings, a telephone information line, website and follow-up with all affected stakeholders. Update letters describing the capacity expansion scope change were mailed to stakeholders in Ontario and Quebec on 25 September 2012 and to stakeholders along Line 9A on 2 November 2012.

Enbridge also stated that it built upon its existing Public Awareness Program (PAP) when designing and implementing its Project-specific consultation program. Enbridge's PAP involves personal and direct discussions at least once every three years with landowners and occupants along the existing Enbridge pipeline RoW. During these discussions, Enbridge provides information relevant to owning or residing on land through which a pipeline runs, including:

- pipeline safety and integrity;
- emergency procedures;
- Enbridge's environmental protection practice; and
- general information about the legal implications of having a pipeline on one's property.

Landowners, tenants and affected members of the public can then raise any concerns or questions they may have with respect to the pipeline operations.

Enbridge met with Ontario Pipeline Landowners Association (OPLA) and the Canadian Association of Energy and Pipeline Landowners Association (CAEPLA) in May 2012. Members of these organizations raised a number of land-related, regulatory and historic issues that were of concern, but not specifically related to the Project. In addition, Enbridge met with l'Union des producteurs agricoles (UPA) in November 2012 where integrity digs, easement agreements and open houses for the Project were discussed.

Enbridge hosted public open houses in communities along the Line 9 RoW. The first five were in June 2012 at Port Hope, Corbyville, Gananoque, Martintown and Maitland, Ontario. The next two open houses were held in Montreal East and Mirabel, Quebec in October 2012. An additional 19 open houses were held in April and June 2013, and further outreach was made to city and town councils, conservation groups, local news media, citizen groups, and individuals. Enbridge submitted that the open houses provided an opportunity for interested people to review and take home Project communication material (i.e., fact sheets), speak directly with Enbridge subject-matter experts and for Enbridge to listen to and learn about the interests of its stakeholders. To ensure that both identified Project stakeholders and the general community had an opportunity to attend open houses, Enbridge mailed invitations to all Project stakeholders, including persons Enbridge identified as being directly affected landowners, communities near to the RoW, elected officials and Aboriginal groups, and advertisements were placed in community newspapers.

Enbridge asserted that its consultation process does not end once a project is approved and committed to ongoing engagement with stakeholders through the lifecycle of the Project. Enbridge stated that the consultation program for the Project has and will continue to involve a number of ongoing activities including:

- arranging meetings and/or presentations as required or requested;
- sending Project update letters as appropriate, the timing of update letters being driven by Project description changes if any, updates on the regulatory process and, should the Project be approved, the status of construction activities;
- responding to emails addressed to the Project email address and calls to the toll-free Project telephone number, both of which are publicly available and communicated in all Project information materials; and
- updating the Project website.

Views of Participants

Union des Producteurs Agricoles (UPA)

UPA stated that consultation with affected parties is a vital component of any project. UPA's members expressed concerns about Enbridge's invitation to open houses which it stated were received 28 September 2012 for meetings to be held on 2 and 3 October 2012. A similar situation occurred in April 2013 as well. UPA asserted that the short time frame between the invitation being received and the date of the open houses impeded many people from attending. In light of this, UPA submitted that full consultation cannot be considered to have taken place with affected parties. Furthermore, spring and autumn are busy seasons for farmers and Enbridge should have taken that into consideration when developing its consultation program.

UPA also submitted that the Ongoing Engagement Report (current Part III Order **Condition 24)**, contained in the Draft Potential Conditions attached to NEB Procedural Update No. 4, should be submitted every six months for the first three years of operation and also for a period of ten years.

Emily Ferguson

Ms. Ferguson lives in a neighbourhood that the pipeline crosses but stated that she and other residents were previously unaware of Line 9. Ms. Ferguson submitted that Enbridge advised her that it notifies the public within 200 m of the pipeline of proposed changes in pipeline operation through its expanded PAP. However, Ms. Ferguson stated that she was aware of residents within the 200 m who had not been consulted regarding the Project, and that in her opinion members of the public had difficulty getting information from Enbridge regarding the location of the pipeline.

Les Citoyens au Courant (CAC)

CAC expressed concerns about Enbridge's consultation in the area of Vaudreuil-Soulanges, Quebec, and stated that Enbridge hosted only one meeting in the area on 25 April 2013, after the deadline to apply to participate in the NEB hearing had already passed. CAC submitted that local municipal leaders believed this meeting would be an open-mic format. When attendees at the meeting realized this was not the case, those who were present voted for an open-mic format which CAC stated was not supported by Enbridge representatives. CAC characterized the meeting as being private conversations, and expressed concerns about the difficulty they experienced with having questions answered in French.

Bayview-Cummer Neighborhood Association (BCNA)

The BCNA stated that many members felt ill-informed about the Project, and submitted that Enbridge's consultation was inadequate and ineffective. In particular, BCNA submitted that the pipeline map published by Enbridge and encompassing all of southern Ontario and Quebec was not sufficient to enable members of the public to determine if they were affected by the Project.

Michel Morency, Marylin Eriksen, David Carson and James Quinn, Beverly Dahmer and Brenda Free, BurlingtonGREEN Environmental Association, Collectif en environnement Mercier-Est, Robert Petrie

These Participants expressed dissatisfaction with Enbridge's transparency and requested that more information from Enbridge regarding emergency response plans and training, environmental protection, and safety of the pipeline among other issues be publicly available. They suggested that information of this type should be shared through regular reporting and monitoring and/or community liaison committees.

Ontario Pipeline Landowners Association (OPLA)

OPLA stated its dissatisfaction with the notification provision related to Enbridge's Investigative Dig Process where Enbridge provides a landowner with notice 7 days before an integrity dig is to be performed. OPLA expressed concern that this appears inconsistent with the Board's requirement for companies to provide notification to the Board of unresolved third-party concerns related to O&M activities at least 21 working days prior to starting work. OPLA further submitted that the integrity digs required for maintenance may have a significant impact on landowners, in terms of both their physical interference with property and their disruption to the lives and livelihoods of landowners and their families.

Enbridge Reply

In reply to the comments that Enbridge's consultation was inadequate, Enbridge submitted that these comments are submitted to the Board without proof and should be rejected. Enbridge stated that it has been responsive to the heightened interest in the Project and described its continued consultation throughout the hearing process. On 31 July 2013 Enbridge mailed Project update letters to all Line 9 stakeholders. In August 2013, Enbridge met with Ville de Terrebonne, Ville de Montréal, and the Toronto Region and Conservation Authority (TRCA) to discuss environmental and safety matters. In total, Enbridge submitted that it contacted over 2,600 interested parties throughout the consultation process for this Project and that it will endeavor to continue to pursue dialogues with interested parties throughout the lifecycle of the Project. To that end, Enbridge committed to organizing meetings and/or presentations, when necessary or requested. Enbridge will also send Project updates as required, respond to emails and telephone inquiries on the 1-800 line set up for the Project, and continue updating the Project website.

Enbridge disagreed with CAC's suggestion that the public meeting held in Rigaud, Quebec on 25 April 2013 was "highly unsatisfactory". Enbridge submitted that it provided on-the-spot translation for any attendees wishing to pose questions in French to English-speaking Enbridge subject matter experts and to translate their responses.

Furthermore, Enbridge submitted that throughout the hearing process it made significant efforts to provide accurate and timely information in both official languages and that it would continue to update its Company website and Commitments Tracking Table in both French and English. Enbridge noted that the *Official Languages Act* does not require anyone appearing before a federal tribunal such as the Board to translate evidence it wishes to place on the record, but instead protects the right of a Participant, such as Enbridge, to use the official language of its choice.

With respect to the concerns about the impact that integrity digs may have on stakeholders, Enbridge submitted that it will consult with stakeholders ahead of time to communicate the schedule, discuss access, identify special considerations and adjust or add remediation steps as appropriate. The sites will be monitored for subsidence for approximately one year after the completion of an excavation project. Additional remediation will be performed as required to ensure restoration of the area has been completed satisfactorily.

Views of the Board

For the Project, the Board evaluates the adequacy of both the design and the implementation of Enbridge's consultation program. As described in the Board's Filing Manual, the Board expects that a consultation program would, at a minimum:

- be initiated as soon as possible in the planning and design phase of a project;
- provide clear, relevant and timely information to potentially affected persons or groups;
- be accessible to and inclusive of all potentially affected persons or groups;
- be responsive to the needs, input and concerns of potentially affected persons or groups; and
- continue throughout the regulatory process, as well as the construction and operation phases of a project.

Design of the Consultation Program

The Board expects companies to design a consultation program that considers the specific or distinct needs of various potentially affected persons or groups. With respect to this Project, the Board is concerned that Enbridge's consultation program was initially slow to provide Application-related materials to French-speaking stakeholders in their language. In the Board's view, this is a separate issue from that of submissions made in a hearing.

As Enbridge rightly points out, and as the Board confirmed in its additional reasons to its Ruling No. 9 in this proceeding, an applicant or any participant may submit materials to the Board in the official language of their choice under the *Official Languages Act*. However, proponents like Enbridge must consider the specific or distinct needs of various potentially affected persons and groups when designing their consultation programs. The Board notes that Enbridge was responsive to the concerns of French-speaking stakeholders and to the increasing levels of public interest in the Project by subsequently providing translated Application-related materials on its website. The Board expects that Enbridge will improve the design of its ongoing consultation program and provide French-speaking stakeholders with materials in French and with access to French-speaking Enbridge staff in a timely manner.

The Board has included in **Condition 5** a requirement that Enbridge file with the Board and post on the company website, in French and English, a Commitments Tracking Table.

The Board also expects Enbridge to take into full account the needs of French-speaking stakeholders when engaging in ongoing consultation, with respect to the Project website and other consultation materials. In addition, Enbridge should be mindful of the schedules of agricultural producers among other possible considerations when designing its ongoing consultation throughout the lifecycle of the Project.

Enbridge stated that it took into account the wider interest received for Line 9 Reversal Phase I Project in the design of its consultation program. The Board is of the view that Enbridge may have initially underestimated the level of interest for this Project, but it did make appropriate adjustments to the design of its consultation program. While it is important to maintain some degree of flexibility within a consultation program, the fact that Enbridge had to add 19 additional information sessions in April and June 2013 is an indication that there was room for improvement in the design of the consultation program. More proactive planning would have allowed Enbridge to provide clear, relevant and timely information to potentially affected persons or groups. This is important because improved understanding between stakeholders contributes to a more effective regulatory process.

In light of the conditions imposed by the Board, the areas identified by the Board for continual improvement, and the responsiveness of the consultation program, the Board is comfortable concluding that the design of the consultation program in general was adequate for the nature of the Project.

Implementation of the Consultation Program

Regarding the implementation of its consultation program, the Board notes that Enbridge contacted over 2,600 interested persons throughout the consultation process, sent information packages to landowners along the Line 9 RoW, engaged with landowner associations, and continued consultation throughout the hearing process. While the Board is satisfied that relevant stakeholders and potentially affected members of the public were contacted, the Board is of the view that there is room for improvement. One area for improvement on the implementation of the consultation program is the short time frame between the invitations being received by stakeholders and the date of some open houses. More timely notification to stakeholders about the open houses would have allowed the consultation activities to be more accessible to and inclusive of all potentially affected persons or groups.

It is also important that persons be able to determine for themselves whether they have an interest in a particular project application before the Board. For example, there is a benefit to companies and the Board if companies make available sufficient information so that interested persons can determine for themselves whether they are within certain consultation zones identified by companies. Improving accessibility of information can help ensure a company's consultation activities are accurate and consistent with the Board's Filing Manual. To facilitate this, the Board encourages Enbridge to provide information that can assist persons in determining whether they have an interest in its applications to the Board, such as by way of providing map information on its website with sufficient detail to determine the proximity of the applied-for project to lands in which the person has an interest.

With respect to concerns raised by stakeholders during the proceeding, the Board carefully considered the mitigation measures proposed by Enbridge in the area of pipeline safety, emergency response and environmental protection as discussed in the following chapters of these Reasons. Where the Board has outstanding concerns in these areas, the Board has decided to impose conditions to address such concerns prior to LTO and beyond.

The Board expects a consultation program to continue throughout the construction and operation phases of a project, which may include activities such as public awareness programs, continuing education, and consultation with persons regarding proposed operations that may potentially affect them. With this expectation in mind, and in consideration of the requests for further consultation with Enbridge, the Board has imposed **Condition 24** to establish an Ongoing Engagement Report. The Board notes that the imposition of **Condition 24** in no way relieves Enbridge of its commitments contained in its PAP.

The Board notes that Mohawk Council of the Kahnawà:ke (MCK), UPA and Ontario Ministry of Energy (OME) requested that the Ongoing Engagement Report continue to be filed with the Board for longer than three years. The Board expects Enbridge to learn from its experience during the Line 9B Hearing and its ongoing engagement, and to continue to engage interested persons and groups during the entire operation of Line 9. **Condition 29** provides that Enbridge must file with the Board a plan describing how Enbridge would continue to engage persons and groups during the operation of Line 9 and how Enbridge would continue to promote transparency of information with its stakeholders.

In light of the conditions imposed by the Board, the commitments made by Enbridge, the areas identified by the Board for continual improvement and the responsiveness of Enbridge's consultation program, the Board is comfortable concluding that the implementation of the consultation program was adequate for the nature of the Project.

Consultation during O&M Activities

The Board currently regulates the O&M activities required on Line 9. With respect to OPLA's concerns regarding integrity digs, the Board continues to require companies to engage with persons whose rights or interests may be affected by O&M prior to undertaking those activities. Companies must document all consultation activities and must provide this documentation to the Board, at least 21 working days prior to the activity if there are unresolved third-party concerns. Such notification is intended to provide the Board with sufficient information to make a decision as to whether to inspect O&M activities that could result in safety consequences to landowners or the public, environmental consequences, or a negative impact on normal third-party use of the RoW or adjacent property. If the inspection reveals any concerns, the Board may impose orders for corrective measures.

The Board notes that the Operations and Maintenance Activities on Pipelines Regulated Under the *National Energy Board Act*: Requirements and Guidance Notes (2005) did not require a company to notify the Board if there were unresolved third-party concerns, whereas the revised Requirements and Guidance Notes (2012) require a company to notify the Board 21 days in advance if there are any unresolved third-party concerns relating to the proposed O&M activity, which came into force on 1 January 2013. The Board further notes that Enbridge and OPLA agreed in 2009 to an "Eastern Region Investigative Dig Process for Landowners on Private Lands" whereby Enbridge commits to make reasonable efforts to contact landowners a minimum of 7 days in advance of any work being conducted. Over and above the Requirements and Guidance Notes , the Board encourages Enbridge and OPLA to work together to reach a revised agreement whereby Enbridge would notify affected third parties sufficiently in advance of the 21 days prior to the commencement of a dig or other activity.

Regarding the potential impacts of integrity digs on livelihoods, the Board notes that Enbridge is responsible to landowners for damages resulting from the work conducted, and would be required to compensate them for damage in accordance with, for example, the terms of the easement agreement registered on the title to the land and, where applicable, the NEB Act.

If there are unresolved issues relating to operations and maintenance activities, the Board offers Appropriate Dispute Resolution (ADR) services to assist in resolving outstanding concerns. The Board's ADR services include informal discussions, facilitated meetings and mediation.

Provision of Project-Specific Information

The Board believes it is important for landowners and other relevant persons to have access to information concerning pipelines in order to understand the impact of such facilities on their interests or responsibilities. For some persons this could mean access to information concerning integrity, incidents and emergency response measures and plans. For example, a landowner should have access to integrity information regarding that part of the pipeline on the landowner's property, while affected municipalities should have access to information that allows first responders to be deployed effectively when necessary.

In this proceeding Enbridge stated that it believes in open and transparent communication with all landowners, communities and Aboriginal groups along the RoW, and that it is committed to sharing information with those who are interested or who are potentially affected by the Project. Enbridge further stated that it does not publicize the precise locations of integrity digs for security reasons, but that this information is communicated to the affected landowners and municipalities when the digs are initiated. Enbridge also committed to communicating the results of its In-line Inspection (ILI) tool runs, including the number of digs required, to affected landowners and municipalities. The Board also notes that several Participants expressed concerns regarding the level of information they receive from Enbridge.

With these considerations in mind, and consistent with Enbridge's commitments to provide information to affected persons, in these Reasons the Board directs Enbridge to provide, upon request, information concerning integrity, incidents and emergency response measures and plans to affected landowners (including municipalities), Aboriginal groups and, where indicated, to emergency response agencies and conservation authorities. The information shared with these affected persons need only relate to lands in which the requestor has a clear and discernable interest or responsibility. The Board recognizes that some of this information may be treated as confidential by Enbridge for legitimate commercial or security reasons. The Board also recognizes that some of this information may be the subject of confidentiality agreements between Enbridge and third parties. The Board expects Enbridge to only assert confidentiality and security concerns when appropriate and to avail itself of confidentiality agreements with requestors when appropriate. To the extent that there is disagreement regarding confidentiality or the scope of the request, either the requestor or Enbridge can seek further direction from the Board.

3.2.2 Consultation with Government Stakeholders

Views of Enbridge

Enbridge's consultation program is described above in Section 3.2.1 and included all levels of government as stakeholders. Enbridge stated that it provided notice about the Project to all affected municipalities in Ontario and Quebec, various provincial ministries and federal government departments, individual Members of Parliament, Members of the Ontario Provincial Parliament and Members of the Quebec National Assembly, as well as mayors and councils of various municipalities where the Project work is being proposed in May 2012 and continuing throughout this proceeding. Enbridge also provided notice to and/or met with conservation authorities along with RoW.

Enbridge submitted that it also relied on its existing PAP to consult with stakeholders and emergency response agencies along Line 9. The purpose of the PAP is to continually educate the public adjacent to the pipeline RoW, as well as police and fire departments and other organizations/agencies, about the location of the pipeline and the pipeline safety procedures to be implemented in the unlikely event of a release. Enbridge further stated that it contacts local agencies, including first responders, within 20 km of the pipeline annually by personal visit. As part of the PAP, Enbridge addresses emergency response information including the roles to be played by Enbridge and the response organizations in the event of an emergency on the Enbridge system. Information gathered from these meetings is reviewed by Enbridge each year to determine if changes to the emergency response plan (ERP) are necessary. In total, Enbridge submitted that it visited more than 140 municipalities along Line 9 in 2012 and its PAP activities for 2013 are ongoing.

Views of Participants

Ontario Ministry of Energy (OME)

OME requested further information about Enbridge's approach to consulting and accommodating community concerns along Line 9 in Ontario, how Enbridge responds to concerns raised by the communities, and what Enbridge's plans for further consultation are. OME also inquired about Enbridge's plan to adopt a continuous improvement approach on Line 9 and how it would report pipeline operation information to the public.

OME requested that Enbridge prepare an annual report on Line 9 operations, including information on spills and associated environmental impacts, repair work completed, integrity digs performed, ILI tool runs, consultation activities, training exercises conducted and maintenance activities. OME submitted that this report should be distributed to landowners, Aboriginal groups, municipal officials, first responders, provincial authorities, and source water protection authorities in order to improve awareness of Line 9, enhance transparency of pipeline operations, and help foster a safety culture at Enbridge.

OME expressed concern that the Ongoing Engagement Report (current Part III Order **Condition 24**) only applies to the first three years of operation. OME further submitted that ongoing annual reporting is necessary and appropriate due to the importance of public awareness.

City of Burlington, City of Hamilton, City of Toronto, Corporation of the City of Kingston, Corporation of the City of Mississauga, Town of Ajax, Regional Municipality of Durham

These municipalities expressed concerns about Enbridge's consultation regarding pipeline integrity, spill response capability, protection of water resources and cost recovery. They also formed a municipal liaison group to facilitate discussions with other municipalities with similar concerns as those of Toronto for the purpose of advising and providing recommendations and conditions of approval to the Board. With respect to consultation, these municipalities requested further information from Enbridge regarding emergency response training and reporting on the safety of the pipeline.

Municipalité de Saint-Télesphore, Municipalité de Ste-Justine-De-Newton, Municipalité de Très-Saint-Rédempteur, Municipalité Régionale de Comté (MRC) de Vaudreuil-Soulanges

These municipalities requested that Enbridge engage in more consultation with them and local emergency responders about emergency response plans and training, and stressed the need to have relevant information about security and risks available at all times. They also asserted that such additional engagement may allow Enbridge to gather information about changing conditions and risks present in their local communities.

City of Montreal

The City of Montreal requested that Enbridge consult with Montreal authorities and emergency responders to develop a comprehensive emergency response plan that is responsive to the City's specific needs.

Enbridge Reply

Enbridge submitted it understands that municipalities desire more information from it on an ongoing basis. Enbridge stated that it has heard very well the concerns expressed about the level of detail previously provided and information that Participants would like to receive from Enbridge in the future. Therefore, in addition to fulfilling the requirements of section 33 of the OPR by meeting annually with first response agencies within 20 km of the Line 9 RoW, Enbridge committed to offering to meet annually with municipal representatives of communities within 20 km of the pipeline RoW.

Enbridge committed to reviewing and revising, in consultation with first responders, the content of the information provided to them. To that end, Enbridge committed to future meetings with interested municipalities for information sharing, training purposes, and to develop site-specific emergency response plans. Enbridge stated that these consultations will be conducted in a specific, meaningful, ongoing and iterative fashion.

Views of the Board

The Board recognizes that government stakeholders are key actors in ensuring the ongoing safe operations of pipelines, in protecting the environment and coordinating effective emergency response. Consultation with government stakeholders for the Project was initiated early in the process, and the Board expects Enbridge to continue its efforts to engage in and maintain effective and timely consultation activities with government stakeholders (including provincial first responders and emergency personnel), as appropriate, throughout the lifecycle of the Project. The Board notes the commitment from Enbridge to offer to meet annually with municipal representatives of communities within 20 km of the pipeline RoW.

The Board further notes the general interest from several government stakeholders and the specific interest from OME for increased transparency from Enbridge regarding ongoing pipeline operations for Line 9. The detailed information that has been requested by OME is an example of the type of information that the Board directs Enbridge to make available as discussed in Section 3.2.1 of these Reasons. The Board has also imposed **Condition 24** for Enbridge to provide an Ongoing Engagement Report for the continued operation of Line 9.

While the Board is satisfied that all relevant government stakeholders were consulted, the Board is of the view that there is room for improvement, including the opportunity for more reciprocal communication. Effective consultation facilitates understanding between stakeholders, which means that gathering information from stakeholders and distributing information to stakeholders is important. For example, the intake of information by the pipeline operator allows it to learn about factors in the community that help improve an integrity management program or an emergency response plan. Pipeline companies should view consultation programs as opportunities to discover new ways to improve their operations from those who live and work closest to the pipeline, rather than simply as obligations they must fulfill because the NEB mandates it. Reciprocal communication also requires that government stakeholders actively participate in discussions during the continued operation of Line 9.

With respect to emergency response, the Board notes that Enbridge must fulfill sections 33 to 35 of the OPR for continued liaison with agencies and persons that may be involved in an emergency response and for the ongoing implementation of a Continuing Education Program for emergency response. Further information regarding emergency response plans, including a discussion of **Conditions 14 and 26**, is discussed in Chapter 5 of these Reasons.

Chapter 4

Facilities

The Board uses a risk-informed lifecycle approach to ensure that NEB-regulated facilities and activities are safe and secure from their initial construction through to their abandonment. In consideration of the safety and security of proposed facilities, the Board assesses whether the facilities are appropriately designed for the properties of the product being transported, the range of operating conditions, and the human and natural environment where the facilities would be located. Specific considerations include the company's approach to engineering design, integrity management, security, emergency preparedness, and health and safety.

4.1 Description of Facilities

The Project facilities are comprised of the following:

a) The additions and modifications at the six Project Sites and resulting necessary changes to related procedures and commitments required to reverse crude oil flow between NW and ML;

b) The additions and modifications at the Project Sites and resulting necessary changes to related procedures and commitments to enable an annual capacity increase from SA to ML;

c) The installation, modification or replacement of equipment and piping within the six Project Sites as described by Enbridge in Section 2 of the Application, and revised in subsequent filings; and

d) The installation of skids with pumps that would inject DRA into reversed Line 9 at SA, NW, HL and CD.

4.2 Design, Construction and Operation

4.2.1 Design, Codes and Standards

Views of Enbridge

Enbridge submitted that the Project would be designed, constructed and operated in accordance with applicable regulations, industry codes and standards, as well as the latest NEB regulatory requirements. The primary applicable regulation is the OPR which incorporates, by reference, the CSA Z662-11 standards. Canadian codes would also be used. In the absence of applicable Canadian codes, American or international codes would be used. The Project would also be designed and operated to meet the requirements of the most recent versions of Enbridge's Engineering Standards and Guidelines.

Views of Participants

Marilyn Eriksen, DurhamCLEAR, Ville de Sainte-Anne-des-Plaines

These Participants submitted concerns with respect to the existing Line 9 being constructed to a previous version of the CSA standard (i.e., CSA Z183, 1973), and that updated design standards are not required to be retroactively applied to previously-built facilities. Ville de Sainte-Anne-des-Plaines recommended that, due to the age of the existing pipeline, it should be replaced entirely with a new pipeline.

4.2.2 Construction

Views of Enbridge

Enbridge stated that with the exception of some TWS, the Project would take place within existing Enbridge properties and RoW. Enbridge further stated that, subject to receipt of regulatory approvals, the anticipated in-service date for the Project is Q4 2014.

Regarding its Quality Management System, Enbridge stated that Project Procurement would implement and coordinate quality processes and requirements with the Project Quality Manager. These work processes and requirements would address quality checks during the procurement cycle and would include: use of Enbridge pre-qualified vendors; quality checks during materials requisitioning and purchasing activities; review and approval of quality inspection and testing plans; and, third-party inspection at vendor facilities.

4.2.3 Operation

4.2.3.1 Hydraulic Design

Views of Enbridge

Enbridge stated that on flow reversal, the NEB-approved maximum operating pressure (MOP) between NW and ML would be maintained at the location-specific pressures previously approved (5 March 1999 Leave to Open (File No: 3400-E101-86)). Enbridge further stated that reversing the flow direction and operating pressure profile of Line 9, as well as increasing the annual capacity, would not require a change to the existing MOP. With respect to current operating pressures, Enbridge submitted that operating pressure restrictions below the NEB-approved MOP have been self-imposed by Enbridge in order to ensure pipeline safety and for operational reasons.

Enbridge stated that the Project includes a proposed increase in the annual capacity of the entire Line 9 from 38,157 m^3/d (240,000 bpd) to 47,696 m^3/d (300,000 bpd), with a maximum design capacity of 52,994 m^3/d (333,333 bpd). The increased capacity would be achieved through the addition of pumps and skids that would inject DRA into Line 9 at existing Enbridge facilities.

Views of Participants

Équiterre (Coalition)

As part of its evidence Équiterre submitted a report authored by Accufacts Inc. (Accufacts Report). The Accufacts Report stated that pressure reductions (such as the one that is currently self-imposed by Enbridge for Line 9B) should not be relied on as a safety factor in pipeline operation. As an example, the Accufacts Report presented evidence indicating that Line 6B failed during the Marshall Incident at a pressure of approximately 56% of specified minimum yield strength (SMYS) or less, while operating under a year-long self-imposed pressure reduction to 60% of SMYS.

4.2.3.2 Service Fluids

Views of Enbridge

Enbridge stated that Line 9 would operate in mixed service, shipping light, medium, and heavy crudes.

Enbridge submitted that the sediment and water content of heavy crudes (0.5% of volume) is expected to be marginally higher than historical averages of light and medium crudes, but that potential accumulations would be managed by maintenance pigging (cleaning) planned for Line 9. Enbridge stated that the typical transport temperature for Line 9 would be below 20 degrees Celsius and the maximum operating temperature would be 38 degrees Celsius. In addition, Enbridge also noted that at operating temperatures, total sulphur content, total acid number, and chloride salt concentrations are not expected to deviate beyond normal Enbridge operating experience, and would not affect the incidence of internal corrosion. With respect to organic chlorides and naphthenic acids, Enbridge stated that at pipeline operating temperatures these compounds would not cause corrosive conditions in the pipeline.

In response to Participant IRs, Enbridge supplied the 2013 National Academy of Sciences Study (NAS Study) on the effects of diluted bitumen on transmission pipelines. The NAS Study found that diluted bitumen does not have unique or extreme properties that make it more likely than other crude oils to cause internal damage to transmission pipelines from corrosion or erosion. Additionally, the NAS Study found that diluted bitumen does not have properties that make it more likely than other crude oils to cause damage to transmission pipelines from external corrosion and cracking or from mechanical forces. Enbridge also submitted that heavy crude, including diluted bitumen, was shipped on Line 9 when it originally operated in eastbound service prior to its original reversal in 1999.

Views of Participants

Carrie Lester, Équiterre (Coalition), Jesse McCormick, Shira Biner, Martin Laplante

These Participants submitted that the shipment of heavy crude would increase the susceptibility of Line 9 to internal corrosion due to higher water and sediment content, increased sulphur and acid concentrations, and elevated operating temperatures, with some citing a 2011 report by the Natural Resources Defense Council on this topic. The Accufacts Report stated that changing crude slates, especially to diluted bitumen, can significantly increase pressure cycles that can accelerate crack growth.

In addition, Mr. McCormick submitted that Enbridge had failed to demonstrate that internal corrosion risk associated with solid deposition for heavy oils has been reliably mitigated. Therefore, Mr. McCormick proposed that Enbridge's request for the transportation of heavy crude oil should be denied. Alternatively, he recommended that additional conditions are required if the Board decides to approve the transportation of heavy crude.

4.2.3.3 Drag Reducing Agent

Views of Enbridge

Enbridge stated that it would use DRA to increase the capacity of Line 9. Enbridge noted that DRA has been used for more than two decades on transmission pipelines including Enbridge's own pipelines (Lines 1, 2, 5, 6, 13, 14, 19, 55, 65 and 67) with no indications that it affects internal corrosion. Enbridge submitted that DRA is nonhazardous and the concentration in oil would be negligible (the maximum proposed concentration is 44 ppm). Enbridge further submitted that the addition of DRA to the crude oil would not affect spill response techniques or equipment effectiveness, would not change the nature of spill response or change any training materials, and would not represent an additional risk to human health or the environment in the unlikely event of a release.

Views of Participants

DurhamCLEAR, Les Citoyens au Courant, Équiterre (Coalition), Beverly Dahmer and Brenda Free, BurlingtonGreen

These Participants stated concerns over the potential toxicity and other adverse properties of DRA in the event of a spill. In addition, the Accufacts Report stated that sudden loss of DRA injection may seriously affect the liquid velocity and possibly lead to pressure surges in the pipeline.

Suncor Energy Marketing Inc. (Suncor)

Suncor submitted that DRAs have been in widespread use, are widely accepted as safe and reliable, and that the attempt to make the use of DRAs controversial is without support. Further, Suncor submitted that there is no basis to contend that any restrictions of any kind should be placed on Suncor's ability to nominate heavy crudes, including diluted bitumen on Line 9.

4.2.3.4 Sectionalizing Valves

Views of Enbridge

Enbridge stated that there are 51 sectionalizing valves in total between NW and ML. Of these valves, 43 are automated and 8 are manually operated. Enbridge also stated that prior to Line 9B going into service in reversed direction it would install 17 new remote-controlled sectionalizing valves along Line 9. Enbridge stated that it would use its Intelligent Valve Placement (IVP) program to confirm the appropriateness of current remote-controlled valve locations and to determine where new ones are needed. Enbridge submitted that this IVP program would be independent of the Project, and would be conducted as part of Enbridge's O&M activities in full compliance with the Board's Operations and Maintenance Activities on Pipelines Regulated Under the *National Energy Board Act*: Requirements and Guidance Notes . Enbridge noted that new optimal valve locations are carefully selected based on their potential volume reduction and other factors, including proximity to sensitive areas such as water crossings, drinking water sources, populated areas, and ecologically and otherwise sensitive areas. Further, Enbridge stated that these remote-controlled valves would be designed such that closure of these valves would not cause an overpressure exceeding 110% of the MOP in the pipeline.

Views of Participants

Les Citoyens au Courant, Mohawk Council of Kahnawà:ke, Town of Ajax, Regional Municipality of Durham, the Corporation of the Town of Whitby, the Corporation of the City of Kingston

These Participants stated that the existing number of sectionalizing valves along Line 9, especially in high consequence areas such as near waterways, is insufficient. In addition, CAC submitted that manually-operated sectionalizing valves should be replaced with valves that can be operated remotely.

4.2.3.5 Pressure Transients and Overpressure Protection

Views of Enbridge

Enbridge provided a Mainline Transient Analysis Summary Report (Pressure Transient Report) in which a series of transient simulations were conducted for the Project to identify whether there are any pressure surges caused by abnormal operating conditions that would exceed 110% of the pipeline MOP and to recommend mitigation measures.

The Pressure Transient Report determined that transient events can cause overpressures exceeding 110% of the MOP in Line 9 from SA to ML resulting in the need for mitigation measures. The mitigation measures Enbridge proposed include the installation of the following:

- a station bypass check valve and upgrading the communication systems at NW;
- station bypass check valves at HL and CD; and
- a surge relief tank, valves and piping, or equivalent surge relief system at ML.

Enbridge concluded that the existing and proposed infrastructure in Line 9 piping from SA to ML would be able to handle the Line 9 transient events with the proposed mitigation measures incorporated.

Views of Participants

Équiterre (Coalition)

The Accufacts Report stated that running heavy crude and the use of DRA to increase capacity could potentially increase the likelihood of pressure transients that exceed the MOP.

4.2.3.6 Pipeline Control

Views of Enbridge

Enbridge submitted that all facilities associated with the Project would be monitored and operated from Enbridge's Control Centre, located near Edmonton, Alberta and that they would be operated in accordance with all applicable regulatory requirements, certificate conditions, licenses and Enbridge's own operating requirements.

In response to IRs, Enbridge stated that following the Marshall Incident it has made a number of improvements to its Pipeline Control and Control Centre Operations, including revising procedures, updating facilities, and augmenting Control Centre Operations Staff.

Views of Participants

Équiterre (Coalition)

The Accufacts Report cited the failure of Enbridge's Control Centre to quickly identify and close sectionalizing valves during the Marshall Incident as evidence of Enbridge's difficulties with pipeline control.

4.2.3.7 Leak Detection

Views of Enbridge

Enbridge stated it would meet or exceed the leak detection system (LDS) requirements of Appendix E of CSA Z662-11, including the requirements of Table E.1 for all class locations (e.g., Class 1, 2, 3, and 4). Enbridge has committed to continuous improvement of its leak detection strategy which it asserts is a comprehensive, multi-layered approach for its pipeline network. Enbridge noted that this strategy encompasses five primary detection methods, each with a different focus and featuring differing technology, resources and timing. Further, Enbridge stated that used together, these methods provide an overlapping and comprehensive leak detection capability: controller monitoring through the Supervisory Control And Data Acquisition (SCADA) system; Computational Pipeline Monitoring (CPM) systems; scheduled line balance calculations; visual aerial and ground surveillance and reports; and, acoustic ILI to detect very small leaks.

Enbridge committed to install new leak detection instrumentation at each pump station and terminal along Line 9 prior to the reversal of Line 9B. Enbridge also committed that, prior to the reversal of Line 9B, it would incorporate longer term calculation windows in an automated line balance monitoring system on Line 9 based on service fluid measurements for one day, one week and one month calculation windows. Enbridge provided Line 9B estimated leak detection sensitivity for alarm windows based on baseline assumptions. In order to further validate the estimates provided for leak sensitivity, Enbridge stated that the detailed engineering and associated studies for leak detection would be completed by 31 January 2014. Also, once the system is put into production and operation, Enbridge has committed to perform additional performance testing to validate the actual sensitivity and reliability performance of the Line 9 CPM system.

In response to IRs regarding changes to its LDS following the Marshall Incident, Enbridge confirmed that it has established a Pipeline Control Systems and Leak Detection department which doubled the number of employees and contractors dedicated to leak detection and pipeline control, enhanced procedures for leak detection and analysis, enhanced training programs, upgraded instrumentation, and scheduled a Column Separation Management application for 2014.

Views of Participants

Équiterre (Coalition), National Farmers Union of Ontario and Ecological Farmers of Ontario, Martin Laplante

These Participants expressed concerns that Enbridge's leak detection is inadequate, citing previous incidents on Enbridge's pipeline system as evidence of this. In addition, some Participants stated that smaller leak volumes that can go undetected by Enbridge's leak detection system pose significant environmental risks.

4.2.3.8 Right-of-Way Inspections and Maintenance

Views of Enbridge

Enbridge stated that it currently manages potential pipeline exposures through bi-weekly RoW inspections to observe changes to the surface conditions on and adjacent to the RoW. To supplement this RoW patrol, Enbridge completes depth-of-cover surveys along the RoW, as well as bathymetric surveys (which measure water bottom profile) on all navigable waterways along the pipeline. These additional surveys allow for identification of locations with decreasing cover depth, and evaluation for remediation requirements. Any sites that are identified as exposed are immediately assessed and remediated if required.

Enbridge submitted that it has established a 10-year cycle to conduct pipeline depth of cover surveys for Line 9 and provided its survey results from 2008-2009. Enbridge noted that if a depth of cover concern were to be raised outside the scheduled survey cycle, Enbridge would take the necessary steps to correct the concern. Where a concern appeared to be recurring, Enbridge stated that it would investigate further, as demonstrated by the geohazard study initiated across the entire Enbridge pipeline system in 2013 to verify depth of cover at slopes and streams.

Views of Participants

Toronto and Region Conservation Authority (TRCA)

TRCA emphasized the importance of proactive monitoring for pipeline exposures to help prevent failures, citing exposures at the Rouge and Don River among others as shortcomings of Enbridge's RoW monitoring.

4.2.3.9 Emergency Shutdown System

Views of Enbridge

In its response to the Board's IR1.26, Enbridge submitted that all stations and terminals involved in the Project have emergency shutdown (ESD) systems in accordance with CSA Z662-11 clause 4.14.3.3. However, Enbridge stated that the motor and the electrical starter for the isolation valve configuration at the stations and inlet valves at the terminals are not backed up by an auxiliary supply (i.e., an alternate source of power). Enbridge also stated that this does not meet the requirement of OPR section 12. Enbridge committed to ensure that, by the in-service date of the Project, its facilities on Line 9 from Sarnia to Montreal would be equipped with an alternative source of power capable of isolating stations and operating bypass valves in the event of an emergency in compliance with OPR section 12 and CSA Z662-11 clause 4.14.3.3.

Views of Participants

Corporation of the City of Mississauga, Ontario Ministry of Energy

These Participants expressed concerns about the safety of Line 9 stations and terminals with regard to their compliance with OPR section 12 and CSA Z662-11 clause 4.14.3.3. They also requested updated information regarding the Board Order SO-E101-001-2013 requiring Enbridge to submit to the Board a Corrective Action Plan to install, at all of the Enbridge and Enbridge Bakken stations under the Board's jurisdiction, an alternate source of power capable of operating the station's emergency shutdown system.

> *Views of the Board*
>
> **Design, Codes and Standards**
>
> The Board is of the view that the general design of the new Project facilities is appropriate for the intended use and that the facilities would be constructed in accordance with the widely accepted standards for design, construction, and operation, including the

mandatory OPR and CSA Z662-11 requirements, as well as the standards, guides and procedures referenced therein.

The Board is of the view that the safe operation of the existing Line 9 pipeline for use under the proposed operating conditions of the Project is dependent on the integrity of the pipeline. These integrity matters are discussed in Section 4.3 of these Reasons. However, the Board notes that while Line 9 was constructed to a previous version of the CSA standard this does not preclude its safe operation, and does not necessitate construction of a new pipeline for the Project. While the applicable CSA standard has been updated regularly since the original construction of Line 9, the fundamental design principles have not been significantly altered to the extent that existing pipeline cannot be operated safely with an appropriate Integrity Management Program (IMP) in place.

CSA Z662-11 requires facilities built under older versions of the standard to be assessed by the company as to whether they remain safe to operate under current conditions, particularly if those conditions have changed. Those assessments are done in accordance with the most recent version of the standard.

Construction

The Board is of the view that the information provided by Enbridge is adequate given that the Project does not require any new permanent lands over and above existing Enbridge properties and RoW. The Board has imposed **Condition 4** for Enbridge to file a construction schedule and monthly progress reports to facilitate Board coordination of compliance verification activities in the field during construction. The Board has also imposed **Conditions 9, 10, 11, 15, 16, 17 and 19** which contain integrity-related requirements to be filed either prior to, or during, construction.

Operation

The Board is of the view that the existing and potential impact of corrosion, cracking, mechanical damage, and integrity management of the pipeline must be considered when determining a safe MOP.

Effects of Heavy Crude and Diluted Bitumen

The Board acknowledges Enbridge's submission that heavy crude, including diluted bitumen, was shipped on Line 9 when it originally operated in eastbound service prior to its reversal in 1999. The findings of the NAS Study further support the view that these products do not pose enhanced risks of failure in transmission pipelines. The Board is of the view that the concerns raised about the potential increased corrosivity of heavy crude, including diluted bitumen, are not supported by the operational history of Line 9 or the chemical and physical characteristics of heavy crude and diluted bitumen. The Board also acknowledges the NAS Study statement that a review of the US National Transportation Safety Board (NTSB) and Canadian TSB investigations over the past decade did not indicate any cases in which specific crude oil types or shipment properties were associated with causes of pipeline damage or failure (including by pressure cycling). The Board notes that the issue of enhanced crack growth due to pressure cycling associated with changing crude slates raised by the Accufacts Report is not unique to heavy crudes, and is of the view that this integrity threat can be managed with an effective IMP. To allow the Board to review Enbridge's work toward ensuring that pressure cycling is being managed appropriately under the new operating conditions of the Project, the Board has imposed **Condition 28** requiring Enbridge to file an updated Deterministic Remaining Life evaluation including an analysis of its actual operating pressure cycling dataset.

Effects of Drag Reducing Agent

The Board acknowledges the concerns of certain Participants regarding the potential toxicity of DRA in the event of a spill on Line 9. The Board also acknowledges Enbridge and Suncor's Argument regarding the history of safe use of DRAs. At the concentrations of DRA that Enbridge is proposing to introduce into the product stream, taking into account its relatively low toxicity as compared to the other substances in crude oil, and based on the Material Safety Data Sheets provided by Enbridge, the Board is of the view that the addition of DRA does not significantly increase the overall toxicity of a spill event. With respect to DRA concerns related to pressure surges in the pipeline, the Board is of the view that the combination of pipeline control, overpressure protection, and surge mitigation measures in place or proposed by Enbridge would be adequate to prevent pressure surges associated with DRA use.

Sectionalizing Valves

The Board is of the view that sectionalizing valves are an important facility component that enhances the safe operation of a pipeline. When located appropriately, and maintained and operated properly, such valves can significantly reduce volumes of product released in the event of a spill. A number of Participants raised concerns over whether high consequence areas, including drinking water intakes, are protected adequately by Enbridge's current valve configuration on Line 9. The Board acknowledges this concern and further notes that the planned increase in volume throughput which would result from the implementation of the capacity expansion portion of the Project could require the addition of new valves in order to maintain the existing level of volume-out in the event of a release. The Board also notes that Enbridge stated that it is in the process of conducting an assessment of its valve locations on Line 9. The Board has imposed **Condition 16** requiring Enbridge to demonstrate that the new Line 9 valves system (as installed prior to LTO) meets or exceeds the requirements of CSA Z662-11, clause 4.4 Valve location and spacing, and to submit the results of its IVP study prior to applying for LTO. This condition requires Enbridge to demonstrate and explain why it believes that the maximum release volume between valves is as low as reasonably practicable so as to prevent spill volumes that pose a significant risk to the public or the environment, including the impact of using manually operated valves instead of remotely operable valves.

Further, in fulfilling this condition, the Board reminds Enbridge of CSA Z662-11 clause 4.4.8, which calls for valves to be placed on both sides of all major water crossings. In its filing required by **Condition 16**, Enbridge is expected to demonstrate how it has satisfied this requirement along the length of Line 9, including a description of the criteria used by Enbridge to identify major water crossings, paying particular attention to note (2) of CSA Z662-11 clause 4.4.8 which defines major water crossing to mean "a water crossing that in the event of an uncontrollable product release poses a significant risk to the public or the environment".

Surge Mitigation Measures

The Pressure Transient Report Enbridge provided indicates that with proposed surge mitigation measures in place, the pipeline will not experience pressures in excess of 110% of MOP. The Board is of the view that with the proposed mitigation measures in place, the incidence of pressure transients can be managed safely. The Board is of the view that the effectiveness of the mitigation measures would not be affected by the shipment of heavy crude and the use of DRA.

Control Centre

The concerns of Participants related to the Marshall Incident focus primarily on the NTSB Report findings that Enbridge's Control Centre response to the incident was inadequate. The Board acknowledges these concerns and notes the changes Enbridge has made to its operations since that incident. In addition, the Board acknowledges the requirements of the Board's own current Safety Order SO-E1O1-003-2013 relative to the Board's Enbridge Edmonton Control Room Inspection and Assessment compliance verification activity (CVA) which requires Enbridge to implement similar and additional improvements to those recommended in the NTSB Report. Taking these changes into account, the Board is of the view that Enbridge's pipeline control systems are adequate for continued safe operation of Line 9. The Board notes that the changes Enbridge has made to its Control Centre operations are the subject of ongoing compliance activities of the NEB, and that the NEB continues to evaluate the implementation and effectiveness of Enbridge's plans.

Leak Detection System

Enbridge stated that it would meet or exceed the LDS requirements of CSA Z662-11 Annex E, including the requirements of Table E.1 for all class locations (e.g., Class 1, 2, 3, and 4) and that it has made a number of changes to its LDS since the Marshall Incident. The Board notes that an updated version of Annex E was released on 13 September 2013. To allow the Board to confirm that the necessary updates to the LDS have been completed prior to reversal, the Board has imposed **Condition 12** requiring Enbridge to file its updated LDS manual which must meet or exceed the guidelines of the newly-released Annex E. In addition, the Board acknowledges that Enbridge supports the City of Toronto's proposed condition to file the results of the LDS study within 30 days following LTO being granted. **Condition 22** requires Enbridge to file these results of its leak detection sensitivity study for Line 9 within 30 days of the Project going into service. With Enbridge's commitments noted previously (including installation of new leak detection instrumentation at each pump station and terminal along Line 9, the regular use of Acoustic ILI to detect very small leaks, regular aerial and ground visual surveillances, and continuous improvement of its leak detection strategy) and the conditions imposed in Order XO-E101-003-2014, the Board is of the view that Enbridge's Line 9 LDS will be adequate.

Right-of-Way Inspections and Maintenance

The Board is of the view that Enbridge's current practice of bi-weekly RoW inspections is adequate to respond to depth of cover and pipeline exposure concerns in a timely manner, and meets the requirements of CSA Z662-11. Given the recent pipeline exposures at the Rouge and Don Rivers on Line 9, the Board acknowledges the concerns of Participants with respect to the need for more proactive monitoring of pipeline exposures, especially in areas which present an enhanced geohazard risk, such as water crossings. Enbridge stated that it is conducting a geohazard study in 2013 for slopes and streams. The Board has imposed **Condition 17** requiring Enbridge to submit the results and proposed mitigation measures from its 2013 geohazard study on Line 9 to confirm that locations presenting an enhanced geohazard risk are being managed appropriately. Further discussion regarding watercourse crossings is provided in Section 6.2.6.2 of these Reasons.

Emergency Shutdown System

The Board acknowledges Enbridge's commitment to ensure, by the in-service date of the Project, that all its facilities on Line 9 from Sarnia to Montreal are equipped with an adequate alternative source of power, as required by OPR section 12 and CSA Z662-11 clause 4.14.3.3. The Board notes that it is closely monitoring Enbridge's ongoing process to comply with the requirements of Order SO-E101-001-2013. The Board has imposed **Condition 15** requiring Enbridge to file, at least 30 days prior to applying for LTO, confirmation that the ESD systems of each facility from SA to ML comply with the OPR.

Conclusion

With the imposed conditions, the Board is of the view that Line 9 can continue to be operated safely after implementation of the Project given the above design, construction, and operation considerations. The Board reiterates that these views are also informed and supported by the Pipeline Integrity section that follows. Finally, the information required to be produced by Enbridge pursuant to this Section or the conditions referenced in this Section shall also be made available on request to affected landowners (including municipalities) and Aboriginal groups, as well as conservation authorities, as per the Board's direction in Section 3.2.1 of these Reasons.

4.3 Pipeline Integrity

4.3.1 Integrity Management Program

A management system as required by the OPR is generally a framework of processes and procedures used by an organization to fulfill its objectives. It would normally contain elements such as accountabilities, procedures for tasks and tools for auditing and continuous improvement. Programs for integrity management may be part of a company's overall management system, or may be one of a series of independent programs. The primary goal of an IMP is to prevent leaks and ruptures caused by in-service degradation of the pipeline.

Views of Enbridge

Enbridge stated that over its long history of operating thousands of kilometres of pipeline, it has maintained a strong record for safety and reliability. Enbridge further stated that it builds and maintains its pipeline system as a long life asset, and that it operates a comprehensive IMP that includes the use of advanced internal inspection tools to ensure that the pipeline is inspected and maintained and can continue to safely operate as long as the pipeline is required.

Enbridge submitted an Engineering Assessment for the Project which details the specifics of its IMP specific to Line 9B (9B EA). In the 9B EA, Enbridge stated that a review of the Line 9 Reversal Phase I Project EA (Phase I EA), in consideration of the increased annual capacity and transportation of heavy crude on Line 9A as a result of the Project, confirmed that Line 9A can be operated safely and reliably under the operating parameters proposed for the Project.

Enbridge further submitted that the 9B EA was developed based on the pre-2012 ILI tool runs performed between NW and ML. Enbridge stated that for metal loss features, it incorporated results from an Ultrasonic Wall Measurement (USWM) and Magnetic Flux Leakage (MFL) tools in order to have a wider coverage, including small diameter corrosion pits, to reduce false negatives and minimize the likelihood of missing near-critical defects. Enbridge also stated that all pipeline sections were inspected for crack related features using high resolution Ultrasonic Crack detection (USCD).

Enbridge submitted that there were a total of 206 unreported features involving 193 Crack-Like (CL) and 13 Stress Corrosion Cracking (SCC) colonies that had field-measured length and depth dimensions that were larger than the tool reporting threshold (i.e., having a depth of 1 mm for the entire length of 60 mm) and were thus classified as false negatives. Enbridge noted that the lowest predicted failure pressure of the 193 false negative CL features was equal to 125% of NEB-approved MOP, while the shortest remaining life was 36 years. The lowest predicted failure pressure of the 13 false negative SCC features was equal to 140% of NEB-approved MOP, while the shortest remaining life was 69 years. Enbridge stated that none of these false negatives posed an immediate threat to the integrity of the pipeline and, as a result, they could be managed through ILI feature detection enhancements, subsequent ILI, and pipeline rehabilitation.

Enbridge also submitted, in its Revised Pipeline Risk Assessment for the Project, that the Line 9 capacity expansion portion of the Project would lead to an increase in the calculated initial volume-out of 95.2 m^3. In addition, the reversal of Line 9B would result in minor increases of risk to the operation of the pipeline at the discharge side of some pump stations (NW, HL, CD and TB) and in minor decreases of risk to the operation of the pipeline at the suction side of some pump stations (HL, CD, TB and ML). Enbridge's qualitative evaluation of the overall risk of the Project resulted in an increase in the assessed risk for approximately 2.2% of the pipeline, corresponding to a higher risk for 60 out of 2,730 assessed segments (305 m each). Enbridge stated that its risk control and mitigation strategies currently being executed manage these risks effectively. Enbridge submitted that following the Marshall Incident it made a number of changes to its IMP, including increasing its spending on integrity management, increasing inline inspections and excavations and placing a renewed emphasis on the safety of its overall system.

Views of Participants

Équiterre (Coalition), City of Toronto, DurhamCLEAR, Mohawk Council of Kahnawà:ke, Beverly Dahmer and Brenda Free, Jennifer Mills

These Participants submitted that Enbridge had not adopted the recommendations of the NTSB Report concerning the Marshall Incident into its IMP. In addition, the Accufacts Report stated concerns with Enbridge's reliance on ILI tools in its IMP.

Some Participants also expressed concerns with Enbridge's risk assessment for the Project. MCK stated that the risk assessment analysis does not provide a quantifiable value as to the level of increased risk, but rather simply provides a qualitative increase or decrease in risk.

4.3.2 Corrosion/Metal Loss

Views of Enbridge

Enbridge submitted that external corrosion on Line 9 has been addressed through the application of an external single layer of Polyethylene Tape (PE Tape) during initial construction and a cathodic protection (CP) system operated and maintained to industry and Enbridge standards. In response to IRs regarding PE Tape, Enbridge acknowledged that corrosion control using CP on PE Tape-wrapped pipelines where disbondment has occurred can be problematic. Enbridge stated that it relies primarily on its IMP for managing this threat. Enbridge submitted that its IMP has provided more comprehensive and effective corrosion management strategies than could be achieved through the application of CP alone. Enbridge further submitted in its 9B EA that these strategies include:

- annual pipe-to-soil surveys to determine the state of the CP system, to evaluate the overall protection level, with any areas that exhibit low potential measurements typically being investigated further using a Close Interval Survey;
- monthly inspection of rectifier parameters to comply with CSA Z662-11, CGA-OCC-1-2005 Control of External Corrosion on Buried Submerged Metallic Piping Systems;

- a remote monitoring program in place for Line 9, enabling continual interrogation of rectifier status through cellular or satellite communication; and
- a Cased Crossing Management program to monitor the identified 208 cased crossings installed to provide mechanical protection from road and railway crossings between NW to ML.

Enbridge stated that it evaluates the protection levels of the CP system using primarily the National Association of Corrosion Engineers (NACE) criteria as per SP-0169-2007 Control of External Corrosion on Underground or Submerged Metallic Piping Systems. Enbridge also stated that it has recently been using coupon technology to validate CP performance and is in the process of expanding this approach with a comprehensive coupon installation program.

Enbridge further stated that, based on the analyses completed and summarized in its 9B EA, the metal loss threat is being adequately addressed and should not prohibit the proposed flow reversal. Enbridge stated that the addition of heavy crude products and the increased capacity on Line 9 is not expected to have any adverse effects, and the correlating impact on pipeline integrity due to metal loss can be managed based on the current IMP. Enbridge submitted that metal loss ILIs were completed for Line 9B in 2012 and are currently under analysis, and that further line assessments would incorporate the newest ILI data.

Views of Participants

David Carson, Derek Leahy, Shira Biner, Martin Laplante

A number of Participants expressed concerns with the PE Tape coating in use on Line 9, and the potential for disbondment and tenting leading to enhanced corrosion. Participants also stated that shipment of heavy crude, especially diluted bitumen, would increase the likelihood of internal corrosion.

4.3.3 Cracking

Views of Enbridge

Enbridge submitted that, based on its 9B EA, there are presently no features reported by the 2004, 2005 and 2006 crack detection inspections that are predicted to constitute an immediate integrity threat due to current reduced operating pressures.

Enbridge also submitted that at the time of crack detection inspections it excavated and repaired all features with estimated failure pressure less than 125% of the MOP using assumptions based on the following:

- Charpy V-notch impact toughness value of 20 ft-lb;
- Wall Thickness (WT) as reported by the GE UltraScan^{TM} Crack Detection tool; and
- Feature Depth as the upper limit of the reported depth bin or maximum profile depth (requested from GE) in some cases.

However, Enbridge noted that since conducting these tool runs and subsequent excavation programs, it has changed its acceptance criteria and the input assumptions used to assess a feature's acceptability. Enbridge provided the following assumptions that it is using now as input into the CorLAS™ software to calculate the predicted failure pressures of reported features:

- Flaw profile considered as rectangular profile;
- WT as the lesser of the nominal WT or the WT measured by the ultrasonic wall measurement ILI tool;
- Nominal yield strength for grade 359 MPa pipes as 359 MPa;
- Nominal tensile strength for grade 359 MPa pipes as 455 MPa;
- Flow strength as yield strength plus 68.9 MPa;
- Charpy V-notch impact toughness value of 15 ft-lb;
- Flaw Depth as the Upper bound of the given reported depth bin; and
- Flaw Length as the total reported feature length.

Enbridge noted that based on these input assumptions, it currently excavates and repairs all features with an estimated failure pressure less than 125% of the MOP. Enbridge also noted that this currently-used acceptance criteria is more accurate and conservative in selecting cracking features, and has provided successful results since its implementation. Enbridge further submitted that it is presently inspecting Line 9B between NW and ML. Enbridge has committed to excavate and repair all features exceeding the acceptance criteria in place for Line 9, prior to the proposed flow reversal and resumption of normal operating pressures.

Enbridge concluded that flow reversal, an increase in throughput, and the shipment of heavy crudes would not require any modifications to the manner in which the existing crack management program is developed or implemented.

Views of Participants

Équiterre (Coalition), Beverly Dahmer and Brenda Free, Derek Leahy

A number of Participants submitted that, due to the cracking and SCC observed on Line 9, the pipeline is more susceptible to rupture, especially in light of the changing operating conditions.

Citing the Accufacts Report, Équiterre submitted that the ILI crack tools used by Enbridge have non-conservative biases that have not been taken into account in the 9B EA. In addition, the Accufacts Report suggested that the ability of the ILI crack tools to reliably identify SCC was overstated. It also cited the recommendations in the NTSB Report regarding the interaction of integrity threats, stating that Enbridge has failed to incorporate the interactive threats associated with corrosion and cracking with real conservatism, such as using a safety factor as recommended by the NTSB Report. For the reasons contained in the Accufacts Report, Équiterre argues that Enbridge over-relies on ILI inspection for crack detection.

4.3.4 Mechanical Damage

Views of Enbridge

Enbridge stated that the processes and procedures included in the Mechanical Damage Management Program are applied universally to all pipelines in Enbridge's system and further, the processes and procedures are applied consistently across its system regardless of the MOP or operating pressure profile of a particular pipeline. Enbridge stated that, accordingly, the reversal of Line 9B would not result in any required changes to the management of mechanical damage.

Enbridge also submitted that the reversal of the operation of Line 9B would have minimal impact on the geometric features that are present in the line.

Views of Participants

Toronto and Region Conservation Authority, Beverly Dahmer and Brenda Free

These Participants stated concerns regarding the risk of mechanical damage to the pipeline, recommending that depth of cover surveys should be completed, with areas of concern proactively remediated.

4.3.5 Geohazard Management

Views of Enbridge

Enbridge submitted that geohazards would continue to be monitored, assessed, and remediated as required. Enbridge further submitted that management of geohazards are unaffected by flow reversal because the Line 9 geohazards are predominantly unaffected by operating conditions. Enbridge stated that Line 9 is inspected periodically to assess for defects that may develop as a result of pipeline operation or external factors including industrial activities or environmental occurrences.

Views of Participants

Louisette Lanteigne, Sarah Harmer

Some Participants expressed concerns relating to Line 9's capability to resist loading as a result of geohazards. Additionally, Participants stated that Enbridge has not taken adequate precautionary measures for blasting associated with the adjacent Elginburg Quarry at MP 2064.

4.3.6 Hydrostatic Pressure Testing (Hydrotesting)

Views of Enbridge

Enbridge stated that hydrotesting a pipeline is one integrity verification technique that it uses as part of a comprehensive IMP. Enbridge further stated that it continues to evaluate the benefits and detrimental effects of hydrotesting. As it relates to the Project, Enbridge stated its evaluation would incorporate all prior IMP data, the recent ILI reports and results from the current investigative dig program.

Enbridge submitted that hydrotesting is not the primary method used by pipeline operators that are able to use high resolution ILI tools for integrity verification. Enbridge further submitted that hydrotesting only provides confirmation at a point in time that the remaining defects have dimensions smaller than a critical defect size and does not guarantee that the line would not fail in the future.

Enbridge noted that consideration should be given to the detrimental effects of hydrotesting, including the potential to induce or grow cracks which do not fail during the test but may continue to grow in-service post-hydrotesting. Enbridge stated that hydrotesting which resulted in propagating crack growth would be counterproductive to its efforts to eliminate pipeline failures.

Views of Participants

Équiterre (Coalition), the Corporation of the City of Kingston, Rising Tide Toronto

These Participants expressed concerns relative to the effectiveness of Enbridge's ILI runs. During oral final argument, Rising Tide Toronto raised questions regarding the total of 206 unreported features (i.e., false negatives), including 193 CL features and 13 SCC colonies, that Enbridge reported in the 9B EA. Additionally, a number of Participants suggested that Enbridge should be required to perform hydrotesting on Line 9 in its entirety prior to reversal and capacity expansion.

The Accufacts Report stated that Enbridge is overly reliant on its ILI inspection results for cracking, and that Enbridge's statements concerning possible damage from hydrotesting are without technical merit. For these reasons the Accufacts Report also recommends that Enbridge should perform hydrotesting on Line 9 prior to the reversal.

4.3.7 Independent Third-Party Review of the Updated EA

Views of Participants

Ontario Ministry of Energy, Ontario Pipeline Landowners Association

OME and OPLA both requested that the Updated Pipeline Engineering Assessment (Updated EA) in **Condition 9** including the risk assessment be reviewed by an independent third-party with appropriate expertise, and that the results of that review should be taken into account by the Board before it decides whether or not to approve the Project. OME supported this approach, in part, because Enbridge performed a revision of the Pipeline Risk Assessment during the course of the hearing which resulted in a higher value for the potential increase in risk associated with the Project (from 0.9% to 2.2%).

Enbridge Reply

Regarding hydrotesting of Line 9, Enbridge submitted a paper titled "The Benefits and Limitations of Hydrostatic Testing", authored by pipeline engineering consultants Mr. John Kiefner and Mr. Willard Maxey. In their paper Kiefner and Maxey stated that for a new pipeline it is appropriate to perform hydrotesting to a minimum of 100 percent of SMYS at the highest elevation in the test section. However, they raised concerns with regard to hydrotesting existing pipelines including downtime during the test, locating and safe disposal of the required amount of test water (considered as hazardous material), and the potential for environmental contamination in case of a leak during the test. Further, the authors stated that ILI is often a better alternative for identifying features such as corrosion-caused metal losses and anomalies alongside or in the seams of electric-resistance-welded pipe. In addition, Kiefner and Maxey raised concerns regarding the possibility of pressure reversal on existing pipelines with defects, which could affect the confidence in the safety margin demonstrated by hydrotesting. They suggested that if time-dependent defects can be located reliably by means of ILIs, using these tools is usually preferable to hydrotesting.

In its Reply Evidence, Enbridge also provided a description of the suite of ILIs that it had performed on the entirety of Line 9B portion between July 2012 and March 2013. Enbridge submitted that these inspections involved: a caliper inspection tool to measure for buckles and dents; a MFL tool to inspect for internal corrosion, external corrosion, and other forms of metal loss; a USCD tool to inspect for longitudinally oriented cracking; a USWM tool to inspect for corrosion and metal loss (in addition to the MFL inspection); and, an axial magnetic flaw detection (AFD) tool to inspect for corrosion and metal loss (in addition to the MFL and USWM inspections). Enbridge further stated that this combination of ILIs enables integration and comparison of data resulting from the application of different technologies and ensures a thorough understanding of the condition of the pipeline.

Enbridge also expressed concerns regarding some Participants' requests to subject the Updated EA proposed by **Condition 9** to review by an independent third party. Enbridge stated that this review is unnecessary, inappropriate, should not be imposed, and that the NEB is the most appropriate expert independent third party.

Views of the Board

Integrity Management Program

Enbridge completed the 9B EA in accordance with CSA Z662-11 which concluded that following implementation of the Project, the pipeline can continue to be operated in a safe and reliable manner. The Board notes that Enbridge arrived at this conclusion, in part, by relying on its commitment within the 9B EA to conduct a number of integrity-related tasks on Line 9 from NW to ML in the future, but prior to bringing the Project into service. This integrity work includes: a comprehensive ILI program targeting metal loss, cracking and geotechnical features between NW and ML; evaluating the results of the ILI program and re-assessment of pipeline integrity based on 2012-2013 inspection data; determining what line rehabilitation activities are required to maintain the integrity of the pipeline; and, executing the required excavations and rehabilitation of the pipeline to maintain pipeline integrity and meet the required operating parameters as per the Enbridge IMP.

Regarding the Pipeline Risk Assessment, the Board notes that Line 9 is an existing pipeline which has been managed by Enbridge's IMP and the Board's regulatory oversight in the past with few incidents. The Board acknowledges Participant concerns that there is an evaluated qualitative 2.2% increase in risk along the pipeline. However, since Enbridge would continue to operate with the same MOPs approved since 1999, the Board is of the view that the risk control and mitigation strategies currently being executed or committed to by Enbridge should manage these risks effectively. The Board is of the view that Enbridge's commitments regarding pipeline integrity amount to a substantial undertaking of integrity work, as described above in Enbridge's reply, that would significantly augment the data and analysis that contributed to Enbridge's 9B EA in support of the Project.

The Board denies the requested exemption from LTO as required by section 47 of the NEB Act, and has imposed **Condition 9** which requires Enbridge to complete the full extent of its work commitment and to submit an Updated EA prior to LTO. The Updated EA shall include the results of Enbridge's integrity work commitments for Line 9 from NW to ML, and shall also include the work related to Condition 13 of Order XO-E101-010-2012 from the Line 9 Phase I Reversal Project that required Enbridge to complete ILI and repairs within the first 18 months of in-service for Line 9 from SA to NW.

The Board expects the Updated EA to address the concerns raised in the Accufacts Report, including coincident defects, tool conservatism, and appropriateness of crack growth rates. The Board acknowledges that the Accufacts Report raises a number of relevant issues related to Enbridge's past IMP. The Board agrees with the Accufacts Report findings that more recently developed ILI tools require an increased amount of verification digs, and that even when ILI tools perform correctly, the pipeline operator must incorporate appropriate engineering assessments. The Board is of the view that with the over 600 excavations Enbridge has planned for Line 9 and the condition that Enbridge file its Updated EA prior to LTO, Enbridge has the opportunity to conduct sufficient assessment and verification of its ILI tools prior to the Project going into service. However, the Board will allow Enbridge to complete the wide range of planned integrity activities it has proposed and committed to do, and then the Board will consider the results of the Updated EA before it determines whether further action or testing is necessary.

Using the results of the Updated EA, the Board has imposed **Condition 10** which requires Enbridge to provide confirmation that the necessary repairs have been made to the critical features on Line 9 to provide for its continued safe operation under the proposed operating conditions of the Project. Enbridge is required to repair all features, in the pipeline sections between SA and ML that meet CSA Z662-11 repair criteria and Enbridge's own excavation and repair criteria (which shall meet or exceed the requirements of CSA Z662-11). Enbridge is also required to repair all features with a safety factor less than 125% of the MOP. Further, the Board has imposed **Condition 19** and **Condition 27** requiring Enbridge to provide long-term integrity improvement plans for non-critical threats that currently do not meet CSA Z662-11 and Enbridge repair criteria.

The Board is of the view that Enbridge's planned integrity activities described above constitute an effective approach to addressing other integrity concerns raised by Participants. If the integrity threats, such as the disbonding of PE Tape coating or nearby industrial activity (such as blasting near the Line 9 RoW), result in deterioration of pipeline integrity, the 2012-2013 ILI results should provide Enbridge an opportunity to investigate critical areas and make repairs where required.

The Board acknowledges Participants' concerns regarding the Marshall Incident and recommendations in the related NTSB Report. In addition, the Board notes the requirements of current NEB Safety Order SO-E1O1-003-2013 relating to the Board's Enbridge Edmonton Control Room Inspection and Assessment CVA, which require Enbridge to implement similar and additional improvements to those recommended in the NTSB Report. Taking into account these changes, the Board is of the view that Enbridge's IMP is adequate for the continued safe operation of Line 9. The Board also notes that the changes Enbridge has made to its IMP are the subject of ongoing compliance verification activities of the NEB, and the NEB continues to evaluate the implementation and effectiveness of Enbridge's integrity management.

Finally, the information Enbridge is required to produce pursuant to this Section or the conditions referenced in this Section, including the Updated EA, ILI data and results, repair criteria, and integrity dig plans, details and results, shall also be made available on request to affected landowners (including municipalities) and Aboriginal groups, as well as conservation authorities, as per the Board's direction in Section 3.2.1 of these Reasons.

Corrosion / Metal Loss

The Board acknowledges concerns raised by Participants that Line 9's PE Tape coating can exacerbate external corrosion. The Board agrees that pipelines with PE Tape coating could be susceptible to disbondment, tenting, and shielding that could lead to external corrosion. The Board also acknowledges Enbridge's approach to prevent, monitor and mitigate potential issues which may arise on existing pipelines with PE Tape coating. This approach, as described in Section 4.3.2 of these Reasons, includes a CP system, annual pipe-to-soil surveys to evaluate the effectiveness of the CP system, monthly inspection of rectifier parameters, remote monitoring program enabling continual interrogation of rectifier status, a Cased Crossing Management program, coupon technology to validate CP performance, routine ILI using high resolution MFL and ultrasonic technologies, and excavation and repair programs. The Board noted Enbridge's ongoing integrity management activities, including overlapping ILI tool runs (MFL, AFD, USWM) and related excavations and repairs, to target corrosion and metal loss features. The Board also noted Enbridge's commitment to integrate lessons learned and recommendations from the NTSB Report and Board's Enbridge Edmonton Control Room

Inspection and Assessment CVA following Marshall Incident, including the validation of ILI tool results.

The Board is of the view that for existing pipelines with PE Tape coating such as Line 9, the main objective of an external corrosion and metal loss management program is to prevent, assess, control, and mitigate potential threats due to coating disbondment, tenting, shielding, etc. The Board imposed **Condition 9** requiring Enbridge to file the Updated EA including the results of its 2012 and 2013 ILI and 2012 CP survey on Line 9. For these reasons, the Board is of the view that Enbridge's approach would effectively manage Line 9 external corrosion and metal loss issues in accordance with the requirements of CSA Z662-11 clause 9.9 (Operation and maintenance of impressed current and sacrificial cathodic protection systems).

With respect to internal corrosion, the Board is of the view that Enbridge's current IMP, which includes regular running of cleaning pigs, is sufficient to address internal corrosion concerns. As noted previously, the Board agrees with Enbridge's conclusion that shipping of heavy crudes, including diluted bitumen, can be done safely on Line 9 with minimal changes to its current IMP.

Requiring the Updated EA prior to LTO, as previously described, will allow the Board to evaluate the effectiveness of Enbridge's ongoing IMP prior to reversal and capacity expansion of Line 9. With the imposed conditions, the Board is of the view that the IMP which Enbridge has implemented to date, and proposed steps going forward, manage corrosion and enable continued safe operation of Line 9.

Cracking

The Board is of the view that the findings in the Accufacts Report related to coincident defects (e.g., SCC and metal loss), tool conservatism, and appropriateness of crack growth rates, are important considerations in managing cracks as part of an effective IMP. The Board's **Condition 9** requiring an Updated EA prior to LTO, **Condition 10** for confirmation of associated repairs (using specified repair criteria), and additionally **Condition 27** which requires the provision of a long term integrity improvement plan, are intended to address these concerns.

In addition, due to the cracking observed on Line 9, the Board has imposed **Condition 19** requiring Enbridge to provide the Board with a cracking management plan for Line 9. With these conditions, the Board is of the view that the IMP which Enbridge has implemented to date, and proposed steps going forward, sufficiently protect the facilities from cracking to enable safe operation of Line 9.

Mechanical Damage and Geohazard Management

The Board is of the view that the Project does not increase the risks of mechanical damage and geohazard threats to Line 9. For those features that currently exist as a result of past mechanical damage or ground movement, the Board is of the view that the previously-discussed conditions requiring an Updated EA and confirmation of associated repairs would require Enbridge to identify and repair any of those features that are deemed critical, or that in combination with other features are also deemed critical.

The Board also notes that requiring an Updated EA would allow the Board to review Enbridge's plans for locations most susceptible to slope movement. With the imposed conditions, the Board is of the view that Enbridge's geohazard and mechanical damage management plans, including third-party damage prevention programs, RoW monitoring, and slope management, would enable continued safe operation of Line 9 under the proposed operating conditions of the Project.

Hydrotesting

The Board notes the recommendation of Équiterre, based on the Accufacts Report, and of other Participants to require Enbridge to conduct hydrotesting of Line 9 prior to bringing the Project into service. However, the Board acknowledges Enbridge's statement that there may be potential detrimental effects of hydrotesting the existing pipeline, including the potential to induce pressure reversal and cracks, or to grow cracks that do not fail during the test but may continue to grow in-service after and potentially as a result of hydrotesting. In addition, in its Table 3, the Accufacts Report notes that when ILI technology is proven it can reveal more about the condition of pipe than hydrotesting would, and that hydrotesting may not effectively identify some features, such as girth welds defects.

For these reasons, the Board elects to make no order at this time regarding hydrotesting of the pre-existing portions of Line 9. However, the Board has imposed **Condition 11** which requires Enbridge to provide its overall hydrotesting program in order for the Board to further understand Enbridge's corporate approach to hydrotesting. After receiving the Updated EA and Enbridge's filings in respect of completed repairs and ILI tool reliability, and after considering Enbridge's corporate policies and approach with respect to hydrotesting, the Board may revisit the issue of requiring hydrotesting prior to granting LTO.

The Board denies Enbridge's request for an exemption from section 47 of the NEB Act. Enbridge must apply for LTO with hydrotesting results for new facilities before it can bring the Project into service. As explained above, the Board will consider Enbridge's response to **Conditions 9, 10 and 11**, to determine whether it ought to require Enbridge to perform hydrotesting on existing portions of Line 9. The Board has also imposed a number of additional conditions with which Enbridge must comply prior to applying for LTO.

Third-Party Review

In response to the recommendation of some Participants that the Updated EA be reviewed by an independent third party, the Board notes that some Participants may not have been aware of the NEB's technical expertise in this area. Throughout these Reasons the Board has taken the opportunity to clarify its role and mandate. The Board is an independent, expert agency with the technical expertise to provide oversight over a wide variety of pipeline design and operation, including the assessment of 50 to 75 new facility applications per year and the ongoing oversight of approximately 71,000 km of currently operating pipelines across Canada[6].

As mentioned in Chapter 2 of these Reasons, the NEB has Engineering, Emergency Management, Safety and Security Specialists dedicated to confirming that the energy infrastructure regulated by the NEB remains safe and secure. These specialists conduct engineering and integrity assessment reviews, operational and safety inspections, audits of emergency management systems, as well as project-specific and system-wide investigations. NEB staff are fully qualified to support the Board in carrying out its mandate, and the Board has the technical expertise to conduct a review of Enbridge's Updated EA, as required by **Condition 9**. The Board may in some circumstances request a third-party review (under full guidance, criteria, control, and validation of the Board) in assessments where there is the use of a non-proven Alternative Integrity Validation method (i.e., non-standard or novel concepts). Enbridge's approach, in this proceeding, is not anticipated to be such an assessment. Further details regarding the implementation of the Board's mandate are provided in Chapter 2 of these Reasons.

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[6] For further information: Proceedings of the Standing Senate Committee on Energy, the Environment and natural Resources; Issue 34 – Evidence – December 6, 2012

Chapter 5

Accidents, Malfunctions and Emergency Response

5.1 Regulatory Requirements

As previously described, the NEB expects pipeline companies to operate in a systematic, comprehensive and proactive manner that anticipates and manages risks. The Board also expects that companies have fully-developed and implemented management systems and protection programs that provide for continuous improvement. A carefully-designed and well-implemented management system supports a strong culture of safety and is fundamental to keeping people safe and protecting the environment. Such management systems must also take account of the roles and involvement of third parties, where appropriate, and are further described below.

Section 6.5 of the OPR sets out the requirement for companies to have comprehensive management systems applying to key program areas contained in the OPR (i.e., Integrity Management, Safety Management, Security, Environmental Protection and Emergency Management). Section 6.5 also requires a company to identify and analyze all hazards and potential hazards and establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions. The hazard analysis informs the development of the Emergency Management Program (EMP).

In accordance with section 32 of the OPR, a company must develop, implement, and maintain an EMP that anticipates, prevents, manages and mitigates conditions during an emergency that could adversely affect property, the environment or the safety of workers or the public. In doing so, a company is required to develop an emergency procedure manual, review it regularly and update it as required. Companies are required to provide the Board with the emergency procedures manual and any updates that are made to it. The Board's expectations of the specific contents of the emergency procedures manual are provided in Annex A of the NEB's Guidance Notes for the National Energy Board Onshore Pipeline Regulations (OPR Guidance Notes), and include, but are not limited to:

- description of initial actions when someone reports an incident;
- incident management system (e.g., Incident Command System);
- spill control procedures and locations of spill control points (if applicable);
- external communication information, warnings and evacuations (e.g., public relations or media plan);
- roles and responsibilities for internal positions involved in a response (including contractors);
- roles and responsibilities for agencies that would likely be involved in a response;
- environmental or other areas requiring special consideration or protection;
- detailed product information;
- up-to-date internal and external contact lists;

- description and location of response equipment, including information on how to access the response equipment on a 24-hour basis; and
- up-to-date area maps.

Section 33 of the OPR requires that a company establish and maintain liaison with the agencies that may be involved in an emergency response on the pipeline, and consult with them in developing and updating the emergency procedures manual. In accordance with the OPR Guidance Notes for section 33, the Board expects that in consulting with agencies that may be involved in emergency response during the development and updating of the emergency procedures manual, a company should, among any other relevant steps:

- use the hazard, safety and/or emergency planning zones calculated as part of the hazard assessment to identify the parties with whom liaison should be established;
- have up-to-date contact lists;
- have a description of the consultation process including a schedule for contacts, nature of discussions, type of information to be provided and the methods to assess the effectiveness of the consultation process;
- include records and documentation of all liaison activities; and
- include actions taken based on the results of the feedback received.

Section 34 of the OPR requires a company to take all reasonable steps to inform all persons who may be associated with an emergency response activity on the pipeline, of the practices and procedures to be followed and make available to them the relevant information that is consistent with that which is specified in the emergency procedures manual. Some key items that should be communicated to potential responders are:

- the type and locations of company facilities;
- all potential hazardous products transported and/or stored at company facilities in significant volumes;
- MSDS sheets or similar information on the properties of products;
- plume dispersion information and ignition guidelines (if applicable);
- spill control points;
- key roles of all company personnel and agencies involved in an emergency response;
- practices and procedures to be followed consistent with those specified in the emergency procedures manual; and
- any relevant information consistent with the manual.

Section 35 of the OPR requires companies to develop a continuing education program for police, fire departments, medical facilities, other appropriate organizations and agencies and the public residing adjacent to the pipeline to inform them of the location of the pipeline, potential emergency situations involving the pipeline and the safety procedures to be followed in case of an emergency. In developing and implementing continuing education for emergency management, the OPR Guidance Notes state that a company should:

- use the hazard, safety and/or emergency planning zones calculated as part of the hazard assessment to identify the parties with whom continuing education should be conducted;
- have up-to-date contact lists of all persons potentially affected by an emergency situation;
- have a rationale for the methods used to distribute information as well as a documented assessment of the success in delivering the safety message;
- document actions taken to deliver information and identify recipients including examples of the information delivery tools; and
- include actions taken based on the results of the feedback received.

In addition to meeting the above requirements, to fully comply with the OPR and meet NEB expectations for an appropriate and effective EMP, a company's EMP should include the following elements, as described in further detail throughout this Chapter, as well as in Annex A of the OPR Guidance Notes:

- Emergency Response Training;
- Emergency Response Exercises;
- Incident and Response Evaluation; and
- Emergency Response Equipment.

In order to fully comply with the OPR, and meet the Board's expectations, a complete EMP must include response plans, means of training personnel to execute those plans, means of conducting exercises to practice and test the implementation of those plans, means of evaluating the plans when carried out during training exercises or true incidents, and the identification, location, and maintenance of suitable equipment to carry out the plans. An EMP requires that all these elements be appropriate, and effective, throughout the lifecycle and operation of a project and the changing conditions both within and outside of a pipeline.

In order to determine compliance with the EMP requirements of the OPR, the Board conducts compliance verification activities on every aspect of an EMP. These activities include reviews of manuals, compliance screening meetings, implementation assessment meetings, information exchange meetings, inspections, and audits. The Board also participates in emergency response exercises as required by the scale of the exercise. During the course of its compliance verification activities, the Board assesses the adequacy, effectiveness and implementation of a company's emergency management (EM) system, EM program and emergency procedure manual(s). The Board's compliance activities are risk-informed and adaptable to take into account changes in a company's facilities or performance.

5.2 Potential effects of accidents and malfunctions

The development of a well-designed management system includes the identification and analysis of all relevant hazards and potential risks. Following the methodology for conducting an environmental and socio-economic assessment (explained in Chapter 6), the Board reviewed the Project and identified the interactions expected to occur between non-routine activities or unplanned events (i.e., accidents and malfunctions) associated with the proposed Project and the surrounding bio-physical and socio-economic elements. Interactions between routine activities related to construction and operation and the surrounding bio-physical and socio-economic elements are discussed in Chapter 6.

Safety and environmental protection are of paramount importance to the Board. As described in Chapter 2, the NEB will take all available actions to protect Canadians and the environment. Chapter 4 of these Reasons provides discussion regarding the integrity of the pipeline which informs the likelihood of potential accidents and malfunctions on Line 9.

As for specific potential effects in the event of such an accident or malfunction occurring, many important factors influence the magnitude and extent of potential spill effects (e.g., weather, time of year, event, duration, type and volume of release, nature and characteristics of site-specific soils, geology, surface water and groundwater). An assessment of the potential effects of a spill must consider these factors in conjunction with the specific characteristics of the spill location. Since spill locations and timing cannot be predicted with any degree of certainty, an assessment on individual receptors or specific areas would be hypothetical.

Views of Enbridge

Enbridge stated that safe operations are a priority for the protection of employees, neighbours and the environment. Enbridge further stated that its projects are designed and developed to prevent accidents and malfunctions to the extent possible. However, accidents and malfunctions could occur as part of routine project activities during any phase of the Project, or during operation of the pipeline as revised pursuant to the Project. Many accidents, malfunctions, and unplanned events are preventable and can be readily addressed through good planning, design, equipment selection, hazards analysis and corrective action, emergency response planning, and mitigation.

As discussed in Section 4.3.1 of these Reasons, Enbridge submitted that as a result of the capacity expansion portion of the Project, approximately 2.2% of Line 9 segments would experience an increase in risk related to pipeline operation. Enbridge clarified that because there are no significant operational changes as a result of the increased capacity, change in product, or addition of the DRA, no changes are required to Enbridge's existing EPP. Additionally, the Project would not modify other risks to the pipeline, such as natural forces, third-party or ground movement.

Enbridge also stated that it uses a Management of Change (MOC) assurance system to manage updates and modifications to its processes and policies, and to clearly communicate the changes to the users of its programs and plans.

Enbridge employs its EMP to minimize impacts from accidental releases. The EMP uses a Pipeline Risk Assessment model, High Consequence Area identification and maps, and environmental sensitivity maps to aid in containing and remediating spills. Particular areas, such as watercourse crossings or pipeline areas assessed as high risk, are subject to additional mitigation and risk control (e.g., tactical response plans). A further discussion of the EMP is provided in Section 5.3 below.

With respect to drinking water, Enbridge submitted that it would activate its emergency response plan in the event of a release, and if drinking water is affected Enbridge would provide a safe, temporary supply of drinking water to residents and take all necessary actions to restore drinking water supplies as soon as practicable. Enbridge would also provide water to livestock or livestock would be moved to a more suitable location if necessary.

In the event of a release, Enbridge has committed to providing the funds required to remediate any incident, focusing first on public safety, dealing with the containment of a release and then maintaining clean-up efforts until the environment has been restored to the same condition as it was prior to the incident. Enbridge also stated it would be responsible for the damages that are directly attributable to its operations and would address property loss and personal injury compensation claims fairly and efficiently.

Enbridge has also committed to working with the TRCA and Environment Canada in refining its EMP.

Views of Participants

Numerous concerns were raised that relate to the potential environmental and socio-economic effects of accidents and malfunctions during the operation of Line 9 in reversed flow, if approved. A frequently expressed concern by Participants was regarding an apparent lack of, or inadequate, site-specific spill management and contingency plans to address a spill from Line 9. Participants shared concerns as to whether and how Enbridge could or would prevent, contain, clean up, and provide contingency measures if a spill were to occur. Participants expressed concerns that, depending on the commodity being carried, the environmental consequences of a leak or rupture could be more detrimental to the environment than currently assessed by Enbridge.

City of Toronto, Council of Canadians – York University Chapter (COC-Y), Toronto and Region Conservation Authority, National Farmers Union of Ontario (NFU-O)

City of Toronto and COC-Y expressed concerns over what they submitted was a generic approach used by Enbridge in their Emergency Response Plan. NFU-O pointed to the need for specific emergency response information for high concentration areas such as an apartment complex or the Toronto Transit Commission Finch station. TRCA also submitted that Enbridge should be taking a more proactive approach to emergency preparedness.

Mississaugas of the New Credit First Nation (MNCFN), Algonquin to Adirondack Collaborative (A2A)

The above Participants submitted both evidence and argument relating to concerns over the release and the vulnerability of local water bodies and other environmentally sensitive areas. Specifically, concerns dealt with the potential for an increased risk of a leak occurring due to the effects of changing operating conditions (i.e., volumes, flow direction, crude types) on pipeline integrity. Their submissions focused on the potential effects of a release on various elements, including water resources, wildlife habitat and land use, as well as on Enbridge's emergency response measures. A2A also expressed wide-ranging concerns as to how the ecosystems along Line 9 would be affected by a potential spill, and how that would in turn, directly or indirectly, affect human health.

Aamjiwnaang First Nation, Chippewas of the Thames First Nation, Council of Canadians – York University Chapter, the Corporation of City of Mississauga, Mohawk Council of Kahnawà:ke, Great Lakes and St. Lawrence Cities Initiative (GLSLCI), Algonquin to Adirondack Collaborative, Les Citoyens Au Courant, Gouvernement du Québec, Toronto and Region Conservation Authority, Municipalité de Rigaud, Municipalité Régionale de Comté de Vaudreuil-Soulanges, Ville de Ste-Anne-des-Plains, Marilyn Eriksen, Sarah Harmer, Carrie Lester, Catherine Doucet, Emily Ferguson, Louise Lanteigne, Dr. Nicole Goodman, Ontario Ministry of Energy, Équiterre (Coalition), Rising Tide Toronto, Friends of the Rouge Watershed, Williams Treaties First Nations, Sustainable Trent

The above Participants expressed concerns about the risks of spills, leaks and discharges of crude oil and the related potential to seriously impact health and impede their way of life. Through Letters of Comment, evidence and argument, these Participants identified concerns with the protection of source water and drinking water while other submissions focused on the overall health risks related to a spill.

Municipalité de Rigaud also raised concerns regarding the risk of fire and the possibility of toxic fumes being released from a fire. Ms. Lester raised the issue of exposure to benzene, heavy metals and polycyclic aromatic hydrocarbons, causing short and long term health effects, paying particular attention to the increased risks towards pregnant women, breastfeeding women and young children.

Grand River Indigenous Solidarity (GRIS), Les Citoyens Au Courant, Union des producteurs agricoles, Municipalité de Rigaud, Municipalité de Sainte-Justine-de-Newton, Municipalité de Très-Saint-Rédempteur

Submissions from these Participants raised concerns over the potential effects on livestock, farmland and farming operations in the event of a spill or release. Additionally, GRIS argued that Enbridge had not articulated a plan to compensate for the loss of local food production.

Paul Kuebler

Mr. Keubler stated that an accident, spill or release on Line 9 would threaten infrastructure services and commercial operations in addition to the public and the environment. Socio-economic impacts could result if product was released into waterways, such as the evacuation of businesses or interrupted access to infrastructure (specifically, water supply and/or electricity generation), if no spill preparations have been developed that take into consideration large industrial or commercial interests.

Enbridge Reply

Enbridge stated that since 2010, it has implemented a large number of changes to its operating procedures based on the lessons learned from the Marshall Incident. The implemented changes affect virtually all aspects of the Enbridge operation, from pipeline and facility integrity management and maintenance to leak detection, and from control centre operations to emergency response and the reinforcement of a safety culture. While spill response is essential, it is important not to lose sight of the measures that Enbridge takes to both guard against the risk of a release and to limit the magnitude of a release should one occur.

Enbridge's risk assessment procedures identify the location of water resources as high consequence areas. Pipeline sections with higher risk to waterways, for example, are identified and evaluated for application of risk control or mitigation in addition to the risk control already in place. Specifically with respect to emergency response, Enbridge asserted that the evidence demonstrates that it has continued to add to its inventory of emergency response equipment, including through acquisition of additional boats, boom and response trailers.

Additionally, for areas of higher potential consequence, and particularly for watercourse crossings, Enbridge has developed tactical response plans following the prioritization approach advocated by the TRCA. Enbridge has completed control point mapping for all of the waterways in Ontario and Quebec that the pipeline crosses. The control point mapping has pre-identified containment and recovery sites along each waterway downstream of the pipeline crossings, as well as strategic locations for deployment of spill containment and recovery equipment (such as booms) to effectively remediate spills to the waterways.

In refining the identification of the areas subject to higher potential consequence, Enbridge further agreed to the proposal advanced by OME to incorporate the vulnerable areas identified in Ontario's water source protection plans into Enbridge's high consequence area data, environmentally sensitive area maps, and emergency response plans prior to LTO and to update that information over time.

Views of the Board

The Board considers any release to be undesirable and agrees that an incident in a particularly sensitive or densely populated area could have greater negative consequences than one in a less sensitive or less densely populated area. Enbridge's preparedness and operational practices are overarching and applicable to the entire Line 9, including the high consequence areas identified through its Pipeline Risk Assessment procedure. Enbridge's EMP must also comply with subsection 32(1) of the OPR which states as follows:

> *"A company shall develop, implement and maintain an emergency management program that anticipates, prevents, manages and mitigates conditions during an emergency that could adversely affect property, the environment or the safety of workers or the public."*

In order for an EMP to be systematic, comprehensive, explicit and proactive, it must include the management system processes referenced in section 6.5 of the OPR. That is, it must include processes to identify hazards, manage risks, train and manage workers, communicate, manage records and documentation, monitor and evaluate progress and continually improve performance. The management system must also provide coordination between the different programs.

In this proceeding, Enbridge submitted a redacted version of its Book 7: Emergency Response document which outlines Enbridge's preparedness and operation practices in the event of an emergency. Book 7 also provides some detail about the roles and responsibilities involved in environmental protection during an emergency response.

The Board notes that in order to develop an appropriate and effective EMP, companies must clearly understand the hazards posed by their operations and products and identify who or what may be exposed to these hazards. An understanding of the exposure to the hazards relies on clear communication between disciplines and staff within the regulated company. The Board appreciates the complexity of assessing the impacts of a spill, due to the low probability in accurately predicting spill locations. However, the Board is of the view that clear communication within Enbridge in accordance with management system requirements in the OPR would moderate this complexity. Of particular concern to the Board is any incident that would result in a pollutant entering drinking water sources, given the significant risk of negative consequences on human health that could result.

It is on this basis that the Board is imposing **Condition 13** which requires Enbridge to submit an environmental emergency framework that demonstrates the coordination, linkages and alignment of the EPP and EMP. The environmental and socio-economic issues managed by the EPP and the day-to-day operation of Line 9 must inform and be informed by the risk assessments and measures managed by the EMP. Appropriate and informed management of the ongoing operation of Line 9 is paramount for effective prevention of accidents or malfunctions.

The Board also recognizes that issues can arise when underground infrastructure is located in close proximity to a pipeline, and for this reason the Board has developed specific requirements in the *National Energy Board Pipeline Crossing Regulations, Part II* (Crossing Regulations). Section 4 of the Crossing Regulations requires companies to establish a PAP that informs the public of the presence of the pipeline and the public's responsibilities regarding any construction or installation of a facility and any excavation that might affect the pipeline. Companies are also required to routinely evaluate the effectiveness of their PAP. The Board may also evaluate and propose enhancements to the PAP through its compliance activities, such as audits and inspections. Enbridge's PAP is further discussed in Chapter 3 of these Reasons.

5.3 Emergency Response Plans (Emergency Procedures Manual)

Emergency response plans are documented in an emergency procedures manual. These plans define all the practices and procedures to be followed in the event of an emergency. As described above in Section 5.1 of these Reasons, the Board has identified in the OPR Guidance Notes for section 34 of the OPR what it expects to be included in an emergency response plan, as well as what it expects to be communicated by a pipeline company to those who may be associated with an emergency response activity on the pipeline.

At a further level of refinement, tactical response plans are enhancements to emergency response plans. Tactical response plans are scenario-specific emergency response plans for select areas and selected scenarios. The purpose of a tactical response plan is to provide responders a pre-developed plan of action for a predefined scenario, in a given location. The focused scope of a tactical response plan allows for the enhanced preparedness of responders to that scenario.

Views of Enbridge

Enbridge stated that it maintains comprehensive emergency response plans, developed in consultation with regulatory agencies and applicable stakeholders, which address regional priorities and high risk locations such as key water crossings and residential communities. Enbridge noted that its emergency response plans consider all types of product being transported on the Enbridge system.

Enbridge stated that it has contracted a third-party organization to develop specific detailed tactical response plans for certain key rivers, in particular some of those that flow into Lake Ontario. To date, Enbridge noted that it has developed tactical response plans for the St. Clair River, Rivière des Milles Îles, Rivière des Prairies, the Ottawa River, the Niagara River, and the Don River. Enbridge also submitted that in 2013, tactical response plans would be developed for the Rideau Canal, the Grand River, the Humber River, and the Trent River. Enbridge stated that the locations chosen for tactical response plan development were mainly selected based on higher potential consequences to the environment, population or the economy if a release from the pipeline were to occur.

Enbridge stated that the tactical response plans are being developed to supplement Enbridge's existing library of control point maps. Enbridge committed to performing tabletop exercises on tactical plans to ensure first responders are aware of the plan content and how to use that content effectively. Enbridge also stated that its control point maps contain flow velocity information, indicating the estimated time for oil to reach the control points under differing flow velocities and conditions. Enbridge noted that it shares control point mapping with first responders and other agencies when requested. Enbridge stated that it conducts regular on-water exercises to test deployment techniques for hard boom, soft boom, skimmers, weirs, and other response equipment. Enbridge stated that, through these exercises, it learns how best to respond to scenarios at different locations along the pipeline.

With regard to providing information to first responders, Enbridge stated that each year it delivers information about pipeline safety to emergency response agencies within a 20 km corridor along Line 9 RoW. Enbridge also acknowledged concerns expressed by Participants regarding this issue and committed to reviewing and revising, in consultation with first responders, the content of the information provided to those persons. Enbridge committed to establish a pipeline maintenance work crew in Mississauga commencing in the third quarter of 2014. Enbridge stated that this crew would respond in the event of any pipeline incident in the greater Toronto area (GTA), and that the crew's location would improve Enbridge's response time to a pipeline incident within the GTA.

In response to an IR from CAC regarding the impacts of product type on spill response, Enbridge stated that oil does not simply submerge or sink when spilled into a watercourse and if some portion of it does, it is frequently a temporary condition arising by way of entrainment, with the result that the oil resurfaces. Enbridge further stated that the factors that contribute to whether or not oil submerges or sinks are complex, can change rapidly, and apply to all crude oils, including diluted bitumen.

Views of Participants

Cataraqui Region Conservation Authority, City of Hamilton, the Corporation of the Town of Whitby, City of Burlington, the Corporation of the City of Kingston, Municipalité de Saint-Télesphore

A number of Participants stated concerns relating to Enbridge's emergency preparedness and response planning. Some Participants stated that Enbridge has not taken into account site specific characteristics (e.g., sensitive environmental receptors, high population density, other sensitive infrastructure, etc.) in its planning.

A number of municipalities noted their concerns with Enbridge's level of consultation activities with respect to emergency response and recommended that Enbridge be required to conduct emergency response exercises with local first responders and to provide more comprehensive emergency response plans and related information to those organizations. Some Participants stated that Enbridge's anticipated time to respond to an emergency (stated by Enbridge to be 1.5 to 4 hours in some areas of the GTA) is insufficient and recommended that faster response times be required.

Concerns were expressed by a number of Participants relating to Enbridge's spill response plan with specific regard to heavy crude and diluted bitumen, citing the potential for these product types to behave differently than other crude types in the event of a spill. Concerns regarding the potential environmental effects of spills are discussed in Section 5.2 of these Reasons, above.

Views of the Board

The Board agrees with Participants that emergency response planning must account for site-specific characteristics and be shared with local first responders. The emergency response planning procedures outlined in Annex A to the OPR Guidance Notes can, if they take into account site-specific characteristics and circumstances, augment existing emergency response procedures where a spill may result in higher consequences. The

Board is of the view that high consequence areas, including locations of high population densities and major watercourse crossings, would benefit from the level of scrutiny and planning outlined in Annex A to the OPR Guidance Notes, particularly as applied on a site-specific basis. First responder agencies would also benefit from the results of such analysis. In order to ensure such benefits are realized and to monitor Enbridge's efforts in this respect, the Board has imposed **Condition 20** to have Enbridge file emergency response plans which are developed for Line 9 in the manner set out in Annex A, on a site-specific basis, 60 days prior to LTO. Should the Board note any issues with these plans, it will follow up with the appropriate compliance activities as required.

The Board also notes Enbridge's commitment to establish a pipeline maintenance work crew in Mississauga in the third quarter of 2014, which should serve to reduce Enbridge's response time for a pipeline incident within the GTA.

With respect to concerns over different product types in the event of a spill, the Board accepts Enbridge's submission that a spill of heavy crudes and diluted bitumen would not immediately sink, but that through volatilization, water movement, and sediment interaction, spilled oil may become submerged and sink. The Board also agrees with Enbridge that this behaviour is not unique to diluted bitumen and heavy crudes, and will take place to some degree with all crude oils. In the event of a spill of any product from Line 9, the Board is of the view that timely and effective spill response is essential to minimize environmental damage of all kinds, including the sinking of crude. The Board is of the view that through the emergency response plans required by **Condition 20** described above, Enbridge would be able to effectively respond to spills, helping to minimize environmental impacts in the event of a spill of any product type.

In order to allow first responders (including landowners, who may be among the first to identify a release) to have necessary information available to them, the information required to be produced by Enbridge pursuant to this Section or the conditions referenced in this Section shall also be made available on request to affected landowners (including municipalities) and Aboriginal groups, as well as first responders and other emergency planning agencies, as per the Board's direction in Section 3.2.1 of these Reasons.

5.4 Emergency Response Exercises and Training

Continuing education of identified responders to an emergency is an important element of an Emergency Management Plan. Identifying whom to train, what training they require, and enabling them to obtain training to an effective level, is as important as the availability of suitable equipment in responding to an emergency.

Emergency response exercises serve as an opportunity to train responders, but also to test the effectiveness of training they have received. Exercises allow for the assessment of the effectiveness the training level currently held by participants, and needed by participants. Simulated (e.g., table-top) exercises are, as identified in Annex A of the Guidance Notes to the OPR, expected to occur annually, with full scale exercises occurring at least every three years.

They are a means to assess the effectiveness and capability of a potential response, and an opportunity to enhance that effectiveness through practice. The learnings from carrying out these exercises are used to modify the other elements of an Emergency Management Plan.

Views of Enbridge

Enbridge indicated that it provides local emergency organizations (within 20 km of the RoW) with the opportunity to conduct spill response exercises and has developed free online training programs for first responders.

> ### *Views of the Board*
>
> The Board agrees with Participants that Enbridge must consult with emergency response stakeholders, conduct emergency response exercises, and work to continuously improve its emergency response capabilities, noting the requirements of sections 33-35 of the OPR. As described previously in this Chapter, the requirements of the OPR are comprehensive and extend to all facets of emergency management. Although the Board acknowledges Enbridge's work in recent years toward meeting the goals of the emergency management requirements in the OPR, including conducting exercises on Line 9 with a number of first response organizations, the Board remains committed to continuous improvement in all aspects of pipeline safety.
>
> To provide further assurance that Enbridge has consulted with necessary stakeholders, the Board has imposed **Condition 14** to confirm, prior to LTO being requested, that Enbridge has an effective and inclusive plan for developing and implementing a continuing education program, liaison program, and other consultation activities pertaining to emergency preparedness and response for the Project. To enhance Enbridge's continued compliance with the emergency management requirements of OPR for Line 9, the Board has imposed **Condition 26**. This Condition requires Enbridge to file annual reports on the Company's continuing education program (including emergency management exercises), liaison program and consultation activities on emergency preparedness and response for Line 9. In respect of the reference to Annex A to the OPR Guidance Notes set out in **Condition 26**, the Board notes in particular sections 5 and 7 of Annex A, which describe tabletop exercises being held at least annually and full scale exercises being held at least every three years, involving all agencies identified in the emergency procedures manual. Notwithstanding **Condition 26**, the Board notes that Enbridge's EMP for Line 9 will continue to be subject to the Board's ongoing compliance verification activities.
>
> The Board is of the view that through completion of the exercises to be reported pursuant to **Condition 26** Enbridge would be required to work with first responders to practice emergency response activities that are site-specific in nature, including some areas for which tactical response plans have been created, thereby encouraging information sharing and more comprehensive emergency response plans. In addition, through conducting these emergency exercises, the lessons learned may provide

opportunities to expedite response times, improve effectiveness of the overall response and help to minimize environmental impacts in the event of a spill of any product type.

5.5 Incident Response and Financial Capability

The safety, security, and contingency planning associated with the construction and operation of the proposed Project, including emergency response planning and third-party damage prevention, is Issue 6 in this proceeding. In defining the list of issues, the Board did not explicitly include the financial capability of Enbridge to support and maintain an adequate response to a release, but did state that Issue 6 is broad enough to address the capability of Enbridge to carry out an emergency response of the scale, scope, and duration required to effectively control and mitigate the effects of an emergency.

Views of Enbridge

Enbridge stated that pursuant to section 75 of the NEB Act,[7] pipeline companies such as Enbridge shall make full compensation for all damage sustained as a result of the operation of a pipeline. Enbridge stated that there are no limits placed on liability for the prevention, remediation and clean-up of oil spills, nor is there any limitation placed on liability for damages to persons, property and the environment. Given these obligations, Enbridge stated that a condition requiring Enbridge to compensate impacted stakeholders is unnecessary.

Enbridge defined a worst-case spill scenario to be a pipeline rupture. The Board requested further information regarding how Enbridge would financially sustain management of all potential risks and liabilities of an incident. Enbridge stated that it is a well-capitalized corporation with a 60 year plus history of mitigating risk exposures related to the reliable operation of its crude oil pipelines.

Enbridge explained that it is covered under a consolidated (umbrella) insurance program maintained by Enbridge Inc. on its various operations and assets that renews annually (on May 1st), and stated that the current year's coverage limit is $685 million. This coverage includes sudden and accidental pollution liability events (subject to a $10 million deductible/retention) and standard coverage exclusions found in most insurance policies. If in a given year the consolidated claims totaled more than the current year's coverage, each individual claim would receive an insurance recovery of the ratio of the coverage to the total claims.

Furthermore, should the cost of damages exceed insurance proceeds, Enbridge stated it would have access to various substantial financial resources, and affirmed that Enbridge is well capitalized with a sizeable equity base and annual positive cash flow. At the ready resources include operating cash flows, draws on Enbridge's $300 million committed bank credit facility, and insurance policies. Additional resources that could be mobilized include further committed bank credit facilities and access to private or public debt markets (especially given Enbridge's A-mid investment grade credit rating).

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[7] Section 75 of the NEB Act states: A company shall, in the exercise of the powers granted by this Act or a Special Act, do as little damage as possible, and shall make full compensation in the manner provided in this Act and in a Special Act, to all persons interested, for all damage sustained by them by reason of the exercise of those powers.

Views of Participants

The financial responsibility of Enbridge was raised by many Participants, including municipalities along Line 9.

Équiterre (Coalition)

In a report prepared by the Goodman Group, Ltd. and submitted by Équiterre (Goodman Report), the costs of an incident on Line 9 were described as varying from significant to catastrophic due to Line 9's proximity to people, water and economic activities and given the range of pipeline malfunction/accident possibilities. The Goodman Report stated that their analysis of costs, which they assert could range from $1 billion in a bad scenario to $10 billion in a worst-case scenario, has been limited to the direct impact on economic activity. The Goodman Report also noted that there is a high degree of uncertainty and a broad range of potential costs. The Goodman Report expressed concerns about Enbridge's financial capability to mitigate and compensate for all potential damages, especially in a worst-case scenario such as a major accident/spill in an area with a large concentration of people and economic activity.

Great Lakes and St. Lawrence Cities Initiative

GLSLCI recommended that the Board create a spill contingency or liability fund, and in its evidence provided examples in Canada and the United States. Given the high costs potentially incurred by ruptures and spills, and in order to provide financial assistance to the various levels of government for costs related to emergency response, clean-ups and other required action. GLSLCI suggested that the Board create a comprehensive oil spill or liability trust fund, financed, for example, by a fee on each barrel of oil conveyed. This fund would be managed by the NEB or another independent or governmental agency or department.

Furthermore, the GLSLCI recommended that the NEB review, on at least an annual basis, Enbridge's insurance limit to confirm adequacy and appropriateness of available coverage limits to satisfy obligations and liabilities that may arise from any major spill and suggested this amount be minimally equivalent to the total clean-up costs of the Marshall Incident.

Ontario Pipeline Landowners Association

OPLA submitted that the Board should impose a condition requiring Enbridge to provide additional financial assurance that is specific to and reserved for Line 9. OPLA raised the concern that if Enbridge exhausts its insurance coverage in a given year, there is nothing guaranteed for Line 9 if an incident occurs. As a result, OPLA requested that the Board ensure that there is coverage, either through insurance or a set-aside fund, specifically earmarked for Line 9.

The Corporation of the City of Mississauga

Evidence from the City of Mississauga stated concerns related to financial assurance of Enbridge related to the Project in addition to its support of the City of Toronto's evidence.

City of Toronto

The City of Toronto, in coordination with other municipalities and conservation authorities, stated in its evidence that it seeks assurances that Enbridge has adequate financial resources, including necessary and adequate insurance coverage, that are quickly available to contain the impacts of a large scale spill, and that adequate financial resources are available to compensate the City of Toronto and its residents for any costs they may incur as a result. The City of Toronto also raised concerns about the need to ensure that Enbridge is required to provide compensation for all costs associated with a spill, including expenses incurred before Enbridge personnel and contractors arrive, and after they leave. For example, the City of Toronto stated that it expects Enbridge to reimburse all costs associated with any evacuation required by municipal Fire Services. The City of Toronto stated that it is unclear under what circumstances Enbridge would refuse to compensate it or its residents in the event of a spill, and in particular if a third party was at fault and the third party fails to or is unable to reimburse others for costs. The City of Toronto requested that the Board address how Enbridge must manage this risk as a condition.

The City of Toronto stated that further financial resources, beyond insurance coverage of $685 million, are necessary to provide assurance that Enbridge would be able to cover all costs arising from a major spill. The City of Toronto suggested that something in the order of $1 billion in insurance coverage is needed. The City of Toronto stated that it is insufficient to say that Enbridge is well capitalized since the level of capitalization is vulnerable to the vagaries of the market which today may be a very significant consideration. The City of Toronto explained that a letter or line of credit or other instrument that does not fluctuate and is committed to Line 9 would provide additional financial assurance.

Municipalité de Rigaud, Municipalité de Très-Saint-Rédempteur, Municipalité régionale de comté de Vaudreuil-Soulanges, Municipalité de Sainte-Justine-de-Newton

The Municipality of Rigaud stated that while pipeline transportation is among the most secure transportation methods, it is nonetheless concerned about the risks. Rigaud suggested that two funds be created: a fund for research and development on the prevention of accidents; and, a contingency fund. Rigaud suggested volumes on Line 9 be subject to a 10 cent per barrel charge, to be allocated to the contingency fund.

The creation of these two funds was also promoted in the submissions of the Municipalité of Très-Saint-Rédempteur, the MRC de Vaudreuil-Soulanges, and the Municipalité de Sainte-Justine-de-Newton.

Ontario Ministry of Energy

OME stated that its assessment of the Project has been informed by six principles, including that the economic and environmental risks and responsibilities, including remediation, should be borne exclusively by pipeline companies, who must also provide financial insurance, demonstrating their capability to respond to leaks and spills. OME expressed the view that additional efforts by Enbridge and further information are required before this Board can be satisfied that the Project should be approved.

OME explained that the adequacy of Enbridge's financial resources to clean up and compensate persons in the event of a large spill or rupture is critical given the high density urban centres through which the pipeline runs and the potential for significant clean-up costs. OME suggested that because Enbridge's current insurance coverage is below the current $1 billion estimated cost to clean up the Marshall Incident, the Board should condition the development of a comprehensive financial assurance plan including at least $1 billion in insurance. Furthermore, OME recommended that this plan be reviewed by the Board every five years and modified as required to ensure that the plan remains adequate, taking into account inflation and other factors.

Enbridge Reply

Enbridge referred to its evidence to counter the position of some Participants that the Board ought to condition approval of the Project on development of a comprehensive financial assurance plan, including at least $1 billion in insurance. Enbridge suggested that it is not necessary to impose any condition respecting financial assurances, including any condition related to the amount of insurance coverage or other financial surety to be maintained, given the evidence it has presented in the proceeding.

Enbridge noted that while it has provided evidence on the amount of insurance coverage that it currently maintains, this does not mean that Enbridge would maintain that particular coverage or that particular amount of coverage going forward. Enbridge submitted that it may not be reasonable to ask it to do so. Enbridge noted that it goes to market to secure its insurance, but reiterates that insurance coverage is only one part of the financial resources that would be available in a worst case scenario.

Enbridge submitted that the Goodman Report itself conceded that its cost estimates contained a high degree of uncertainty, and that the Goodman Report cost estimates were unsupported and relied on inappropriate comparators. Enbridge also urged the Board to take notice of the recent Speech from the Throne in which the Government of Canada signaled its intention to increase required liability insurance for pipeline companies and argued that if all NEB-regulated pipelines were made subject to requirements to maintain financial assurances, including insurance, then that decision should be made as one of Government policy and not by the Board on a project-specific basis.

Views of the Board

As noted previously, safety and environmental protection are of paramount importance to the Board. The Board has a number of conditions that Enbridge must meet in order to be granted LTO and place the pipeline into operation. The Board's assessment of the issue of financial capability is contingent upon Enbridge successfully achieving these conditions.

It is important to reiterate that **Condition 3** states that Enbridge "shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations, procedures and its commitments for the protection of the environment included in or referred to in its Application or in its related submissions."

Enbridge stated that it is a well-capitalized corporation and can satisfy its obligations by drawing upon its substantial financial resources. The Board notes that Enbridge would not be in compliance with **Condition 3** if there was a change in its position such that its representations in this proceeding were no longer valid.

Views of the Majority

In the Majority's view, Enbridge has sufficiently demonstrated that it has the financial capability to meet its obligations arising from an incident as a result of this Project. This is particularly so given that Line 9 is an existing currently operating pipeline under the Board's jurisdiction, and the Project is of limited scope, representing only an incremental change to the current operation of the pipeline. The Majority notes that third-party insurance is but one financial resource for Enbridge to use in the event of an incident. As described by Enbridge, other available resources include operating cash flows, committed bank credit facilities, and private or public debt markets. In other words, insurance policy limits do not define the limits of Enbridge's financial capability to address its potential responsibility.

In the Majority's view, Enbridge provided sufficient evidence of the size and strength of its financial resources, including insurance. Additionally, no Participant presented evidence to demonstrate that Enbridge is not capable of fulfilling its financial obligations under the law, or that Enbridge has evaded such responsibilities in the past. Furthermore, no Participant presented expert evidence to credibly counter Enbridge's evidence regarding its financial capability.

It is the responsibility of each pipeline company to have in place insurance coverage appropriate for their respective facilities and operations, and the Board expects pipeline companies to make appropriate business decisions to ensure they can meet all current and potential future legal obligations. The Board monitors the financial strength of all major pipeline companies including Enbridge, and reviews financial documents such as annual financial statements to monitor trends and assess performance. It is also the Board's practice to examine the insurance coverage of pipeline companies selected for financial regulatory audits.

The Majority notes that, as mentioned by Enbridge, the Government of Canada has signaled an intention to change how pipeline companies demonstrate financial capability. However, no reliance can be placed on, for example, legislation that does not exist. The Majority does agree with Enbridge, however, that should such a change occur, there is benefit to it being applied consistently. This does not mean the Majority is of the view that a condition concerning a company's financial capability, including insurance considerations, is never appropriate. The Majority acknowledges that such a condition may be appropriate on a project-specific basis in certain circumstances. Indeed, the Board has on certain occasions stated its expectation that companies procure and maintain sufficient insurance to meet potential financial risks and liabilities related to pipeline failures throughout the lifecycle of a pipeline. On a case-by-case basis the Board may also determine that specific insurance coverage is required.

In the Majority's view, based on the evidence before it in this proceeding, and given the limited scope of the Project, such a condition is not necessary for this Project. However, this determination does not preclude the application of any future regulatory or legislative change that may impact Line 9 or Enbridge regarding such matters.

The Majority notes Member Richmond's reference in his views on this issue to the Report of the Joint Review Panel for the Enbridge Northern Gateway Project (JRP Report). The JRP Report is based on evidence from that proceeding and, in contrast to this Project, the Northern Gateway application is made by a proponent with a different corporate structure and defined liabilities, and proposes a start-up greenfield project with no operational track record, and no verifiable financial resources or credit capacity. The Majority finds the distinctions between these two projects, and their respective proponents, to be significant.

Views of Member Richmond

The ability to mitigate and remediate the impacts of potential spills is a critical component of pipeline safety. In my view, the Board must consider the increase in potential impacts of a spill in light of the Project's capacity increase, including the potential impacts a spill could have once the Project is fully implemented (and as a result of the Project being fully implemented). This includes the risk that any deficiency with respect to Enbridge's financial capability might result in an inability to undertake, or a detrimental delay in the performance of, mitigation and remediation activities. I consider this a potential threat to pipeline safety and to public safety. Since the financial capability to respond to a spill may impact the timeliness or adequacy of spill response, it is in keeping with the Board's mandate to protect human health and the environment to consider conditions that mitigate such risks.

Enbridge asserts that based on its ability to draw upon its substantial financial resources, it can satisfy obligations arising in the event of a spill. While I concede that the Board is not faced with evidence that Enbridge is incapable of fulfilling its financial obligations, I am not satisfied that the evidence submitted by Enbridge is sufficient to support its forward-looking assurances.

The financial statements to which Enbridge made reference represent only a portion of the "significant resources" which it asserted are held within the entire Enbridge group of companies. When expressly asked by the Board whether Enbridge Pipelines Inc. would have access to the full spectrum of financial resources held by its parent company Enbridge Inc., Enbridge Pipelines Inc. declined to confirm its access to such resources, stating instead that it had access to its own resources, but notably omitting any reference to access to the financial resources of Enbridge Inc. Enbridge Pipelines Inc., Enbridge Inc. and other entities in the corporate family, are either corporations or limited partnerships. They enjoy certain legal protections established by the limited liability provisions of the statutes under which they were formed or incorporated. I am therefore of the view that there is no legal or factual basis to conclude that Enbridge Pipelines Inc. or its creditors would, in the event of an accident, have recourse to the financial resources of any other entity in the Enbridge family.

Even if I were satisfied that the financial resources to which Enbridge Pipelines Inc. purports to have access were sufficient to meet its NEB-regulated obligations, it could only be for the moment. In my view, neither the current financial status of Enbridge Pipelines Inc. and its parent, nor the existence of any historical cash flow, current credit rating or current credit facilities for the benefit of Enbridge Pipelines Inc. and its parent provide adequate indication of Enbridge's capability to satisfy such obligations at any point in the future. I note, for example, that Enbridge's financial statements referenced in this proceeding reveal that the $300 million committed bank credit facilities to which Enbridge referred in its evidence matured in 2013. Although these credit facilities may have been subsequently renewed, the Board cannot be assured of this without a mandatory ongoing reporting requirement. This demonstrates why a reporting condition with continuous monitoring would be necessary, as I cannot consider sources of financing which have expired or will expire in the near term to be sufficient to ensure the continuity of that financial capability. I do not consider these credit facilities, or the $685 million insurance policy of Enbridge Inc. which expires 1 May of each year unless renewed, or any other sources of financing whose availability is subject to expiration in the short term, to be sufficient to demonstrate ongoing financial capability.

An additional concern about the insurance held by the parent company is that it may be subject to competing concurrent claims from other Enbridge corporate entities.

Accordingly, it is my view that a condition should have been imposed, to be satisfied prior to LTO, requiring Enbridge to demonstrate by way of a report to the Board that it has legally enforceable access to financial resources which are and will continue to be adequate to fund any reasonably foreseeable NEB-regulated obligations which arise as a result of a spill. To satisfy such a condition, Enbridge would be required to describe with specificity the nature and quantum of those resources and to demonstrate Enbridge Pipeline Inc.'s legal right to access them. My proposed condition would require Enbridge to update this report following any material change in its estimate of the costs necessary to satisfy the potential obligations described above, or in the value, accessibility or status of one or more of the financial resources cited in the report. This would allow the Board to satisfy itself as to whether Enbridge is maintaining adequate access to financial resources to meet potential obligations in the event of a spill along Line 9.

I agree with my colleagues that any inaccuracy in Enbridge Pipelines Inc.'s representation that it is a well-capitalized corporation and can satisfy its obligations by drawing upon its substantial financial resources, or any change to its financial status which would render such warranty untrue in the future, would be a breach of Condition 3. However, from a practical perspective, without a condition of the nature I have described, it is likely that the Board would only be able to identify such a breach after a spill were to occur and Enbridge were to reveal itself to be incapable of fulfilling its financial obligations. At that point, it would be too late for the Board to take any action to remedy the breach. A clean-up order would be of limited value if Enbridge has already declared it does not have the funds to conduct a clean-up and compensate victims. An Administrative Monetary Penalty would be of limited value for the same reason. In my view, having the means to identify such potential financial shortfalls, prior to a spill occurring, is necessary if the Board considers safety and environmental protection to be of paramount importance.

I agree with the Majority that the Board cannot rely on proposed legislation that is not in force. I also note their view that such a condition may be appropriate on a project-specific basis in certain circumstances. In my view, this is one of those circumstances, for the reasons explained above.

The Joint Review Panel for the Enbridge Northern Gateway Project (Gateway JRP) recently came to a similar conclusion with respect to that project but explained certain of their reasons more eloquently as follows:

> *...the Panel finds that [the applicant] must have the financial capability to pay for the damages and losses while also responding effectively with cleanup and remediation action....*
>
> *The Panel is of the view that major industrial projects, such as [the project], must operate to minimize the risk of damages to the environment and the public. Should the project cause damage, the operator should be responsible for the costs of such damages. This requires the Panel to examine the potential costs of a large oil spill and [the applicant's] financial capability to pay for the damages and losses caused by a spill. The responsibility for these losses and damages must be borne by [the applicant] and not by third parties or the public.*[8]

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[8] Report of the Joint Review Panel for the Enbridge Northern Gateway Project, volume II, pg 361

> *The instruments in the financial assurances plan and the proceeds from these instruments must be dedicated to covering the cost of a large oil spill or other malfunctions, accidents, and failures during the project's operations. At all times, [the applicant] must isolate, to the fullest extent possible, the payout proceeds of the instruments in its financial assurances plan from its operations and financial circumstances, including potential insolvency*[9].

While the scope and nature of the Northern Gateway application can be distinguished from the current Application, the principles regarding responsibility for damages and remediation, the necessity for assurance of ongoing financial capability, and the concerns regarding legislated liability limitations applicable to both corporations and limited partnerships as a matter of law, are the same. I therefore subscribe to the reasons of the Gateway JRP, cited above, in respect of this Project.

I also note that in the event that a policy, regulation or statute were to be enacted that could supersede the condition I would have imposed with respect to Enbridge's financial capability, Enbridge would have been free to seek a variance from the Board at that time to correct any overlap, duplication or contradiction.

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[9] Report of the Joint Review Panel for the Enbridge Northern Gateway Project, volume II, pg 363

Chapter 6

Environment, Socio-Economic and Land Matters

The protection of the environment, as well as the safety of Canadians in the construction, operation and abandonment of pipeline facilities regulated by the NEB, are top priorities of the Board, and have been a part of the Board's mandate since its inception in 1959. The Board considered environmental matters in the 1975 decision for the original Line 9 Pipeline,[10] the 1997 decision regarding the reversal of Line 9 [11] and the 2012 decision to reverse Line 9A from Sarnia to North Westover, Ontario.[12]

The NEB is responsible for assessing the environmental and socio-economic effects of energy projects within its jurisdiction, such as international and interprovincial pipelines in Canada, certain natural gas processing plants, and related facilities and activities. The NEB's environmental and socio-economic assessment responsibilities cover four distinct phases:

1. Evaluating potential effects of construction and operation of proposed projects;
2. Monitoring and enforcing terms and conditions before, during and after construction;
3. Monitoring and regulating ongoing operations, including decommissioning; and
4. Evaluating potential effects of abandonment.

The NEB's objectives for environmental and socio-economic assessment are that:

- the potential effects of projects receive thorough consideration before any decisions are made allowing a project to proceed;
- projects are not likely to cause significant adverse effects or contribute to significant adverse cumulative effects;
- there is an opportunity for meaningful public and Aboriginal participation; and
- the NEB's process and its decisions or recommendations are transparent and reflect the input received from those participating in the environmental assessment and regulatory review process.

6.1 Project Details

Appropriate scoping, or project definition, is the foundation upon which an effective environmental and socio-economic assessment is built. The project definition ensures that the assessment focuses on relevant issues and concerns, and assists in determining the appropriate level of detail to include in the assessment. A proper project definition, or scope, reduces the risk of including irrelevant information in the assessment or excluding factors that should be assessed.

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[10] OH-1-74 – NEB Report to Governor in Council, Interprovincial Pipe Line Limited, May 1975.

[11] OH-2-97 – NEB Reasons for Decision, Interprovincial Pipe Line Inc., December 1997.

[12] OH-005-2011 – NEB Letter Decision, Enbridge Pipelines Inc. Line 9 Reversal Phase I Project.

6.1.1 Construction Phase

Unlike greenfield pipeline construction, the physical activities associated with this Project include additions and modifications at existing terminals and stations. The following table summarizes the Project components at each Project Site:

Construction Activity	**SA**	**NW**	**HL**	**CD**	**TB**	**ML**
Pump and piping modifications	●	●	●	●		●
Install new valves and piping	●	●	●	●	●	●
Move/replace existing densitometer or other flow meters		●	●		●	●
Replace pig trap		●				●
Install DRA skids	●	●	●	●		
Install surge relief tank						●
Erect new building (4.5 m^2)						●

Physical activities during construction would vary by Project Site, and may include, but are not limited to: topsoil/gravel stripping; minor excavating; dewatering; backfilling; mechanical and electrical equipment installation; hydrostatic testing; foundation construction; clean-up; and, reclamation. Construction would occur in existing Enbridge facilities and on surface leases with no planned ground disturbances along the RoW itself.

TWS on Enbridge property outside the current facility fence line would be required (i) for parking, laydown and construction trailer storage at NW, HL and CD, and (ii) for construction trailers and crane set-up during construction within the industrial area surrounding ML. The TWS would not require additional clearing. At ML, TWS outside of the Enbridge property boundary would require landowner authorization, which is discussed in Section 6.4 of these Reasons. No in-water works are required at any of the six Project Sites, though de-watering may be required at NW. No new access is required.

6.1.2 Operations Phase

The Project does not require or involve any increase in MOP beyond those previously approved as Enbridge proposes to use a DRA polymer to achieve the capacity expansion. Enbridge would continue to implement its existing integrity management and environmental management practices along the entirety of Line 9 and associated facilities. This includes monitoring and updating practices based on current environmental conditions, maintenance and repair work as required (including ground disturbance) and line patrols on the ground and by air.

6.1.3 Abandonment Phase

Pursuant to the NEB Act, any plans for abandonment of Line 9, in whole or in part, would require an application to the Board, at which time the Board would assess the environmental and socio-economic effects associated with abandonment.

6.2 Environmental and Socio-Economic Assessment (ESA)

In accordance with the NEB Act, the Board has considered all relevant environmental and socio-economic matters regarding the Application, and this section (Section 6.2) represents the NEB's environmental and socio-economic assessment (ESA) of the Project.

6.2.1 The ESA Methodology

In assessing the environmental and socio-economic effects of the Project, the NEB uses an issue-based approach as set out in the NEB's Filing Manual. Based on the nature of activities proposed (described above in Section 6.1) and the environmental setting of those activities, the Board identified potential Project-environment interactions. Where there were no potential Project-environment interactions, or where the potential interactions would be positive or neutral, then no further assessment was necessary.

The NEB then assessed the Project-environment interactions with a potential for adverse environmental or socio-economic effects, including those identified as relevant matters of public concern, as well as the adequacy of Enbridge's proposed environmental protection strategies and mitigation measures. The potential impacts of the Project on bio-physical and socio-economic elements are limited to those resulting from the construction activities at the Project Sites and those resulting from the overall increase in risk as a result of the capacity expansion portion of the Project (as discussed in Section 4.3.1). The potential effects of accidents and malfunctions are discussed in Chapter 5 of these Reasons.

For those elements where Project interactions were predicted, the Board then identified any potential adverse effects. In assessing the significance of the likely adverse effects identified, the Board reviewed the extent to which standard mitigation is relied on or whether the potential effects may require additional mitigation. Where likely residual effects remain after the implementation of proposed mitigation including Board imposed conditions, cumulative effects were considered.

The activities associated with the Project are not listed in the *Regulations Designating Physical Activities* under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) and therefore, an ESA under CEAA 2012 is not mandated.

6.2.2 Environmental and Socio-Economic Issues Raised by Participants

Participants expressed a variety of concerns relating to a range of environmental and socio-economic elements, including soils and soil productivity, vegetation, water quality and quantity, fish and fish habitat, wetlands, wildlife and wildlife habitat, species at risk, air emissions, heritage resources, and employment and economy. Generally, these concerns related to the potential for accidents and malfunctions during the operation of Line 9 once the Project has been completed, and specifically, both the potential for an increased risk of a leak occurring due to the effects of changing operating conditions (volumes, flow direction, crude types) on pipeline integrity, and the potential effects of a release on the elements listed above.

The Board's analysis of pipeline integrity and the risk of failure is presented in Chapter 4 of these Reasons. An analysis of potential environmental and socio-economic effects due to accidents and malfunctions, as well as the Board's assessment of Enbridge's EMP, are presented in Chapter 5 of these Reasons.

6.2.3 Matters Not Included in the Assessment

The Board received several submissions describing issues and concerns that Participants submitted ought to be assessed in the ESA for the Project, but which were not relevant to the Board's overall assessment of the applied-for Project as described in the List of Issues (Appendix I).

Existing Enbridge Line 9 Pipeline

Enbridge's Line 9 exists as a buried pipeline that is currently operating. Since the original certificate was issued in 1975, Line 9 has been regulated by the Board and subject to the evolving regulatory requirements of the NEB, including compliance with the OPR and all updates to the OPR. The Board expects the environment to be protected throughout the lifecycle of all NEB-regulated facilities and activities.

Details pertaining to management of the existing potential environmental effects of accidents, malfunctions and unplanned events are contained in Enbridge's existing EPP as required by section 48 of the OPR:

> *"A company shall develop, implement and maintain an environmental protection program that anticipates, prevents, manages and mitigates conditions that could adversely affect the environment."*

Upstream/Downstream Activities

The Board explained in its Procedural Update No. 1 (4 April 2013) that it would only consider upstream oil sands production in its cumulative effects assessment to the extent that these activities may interact with the likely residual effects of the Project. To the extent that the source of the crude oil to be transported could come from Alberta's oil sands or other oil production projects, such oil exploration or production projects would be the subject of the applicable province's regulatory and/or environmental assessment and oversight. The Board's analysis in this ESA has determined that the Project and oil sands production, or other Canadian oil production potentially supplying the Project, are sufficiently geographically separated that there is not likely to be any meaningful or measureable interactions between the likely residual environmental effects of the Project and those activities.

The Board considered the likely residual effects associated with the Project combined with the existing and near-future conditions of the receiving environment. As stated in Procedural Update No. 1, the Board did not consider the environmental and socio-economic effects of downstream consumption (i.e., end use) of oil transported by Line 9 within the cumulative effects assessment for the Project. The actual end use of oil to be transported by the Project and, more specifically, the related impacts of such product delivery on the overall mix or patterns of energy use in potential downstream markets, are either uncertain or insufficiently discernible or material to merit consideration. Therefore, any examination of potential environmental effects from such speculative impacts on the downstream mix or patterns of energy use in destination markets would be hypothetical and of no meaningful utility to the Board's ESA or public interest determination. The Board finds that the potential for effects of downstream use of oil to act cumulatively with any potential effects of the Project is too speculative to merit consideration. Further, the construction and operation of any industrial facilities related to the downstream use of the oil transported on Line 9 (such as refineries in Ontario and Quebec) have or would be the subject of the applicable Province's regulatory and/or environmental assessment and oversight.

6.2.4 Environmental and Socio-Economic Effects Analysis

The Board has reviewed the Project and identified interactions expected to occur between the proposed Project activities and the surrounding bio-physical and socio-economic elements. In assessing the effects of the Project, the Board considered whether the Project would interact with the following elements:

- Soil and Soil Productivity
- Vegetation
- Water Quality and Quantity
- Fish and Fish Habitat
- Wetlands
- Wildlife and Wildlife Habitat
- Species at Risk or of Special Status (Federal & Provincial)
- Noise
- Heritage Resources
- Air Quality
- Infrastructure and Services
- Employment and Economy

The Board also considered the potential accidents and malfunctions that may occur due to the Project, and any change to the Project that may be caused by the environment. Potential effects of accidents and malfunctions are discussed in Chapter 5 of these Reasons.

For those elements where Project interactions were predicted, the Board then identified any potential adverse effects. The majority of bio-physical and socio-economic interactions, excluding accident and malfunctions, are expected to be negligible or managed effectively through standard mitigation. Interactions that are not expected to be negligible or for which the Board has specific views are discussed in further detail in Section 6.2.6. Definitions of the criteria used to evaluate the significance of the potential effects are presented in Appendix II of these Reasons.

6.2.5 Potential Adverse Environmental and Socio-Economic Effects and Standard Mitigation Measures[13]

Views of Enbridge

In its Application, including its Environmental and Socio-economic Impact Assessment (ESEIA) and subsequent submissions, Enbridge identified routine design and standard mitigation, largely incorporated into its existing EPP, to mitigate the majority of potential adverse environmental effects arising from the Project.

Enbridge identified general and site-specific measures based on current industry-accepted standards, consultation and engagement with regulatory agencies, and the professional knowledge of its assessment team. Among the mitigation strategies to avoid or minimize the effects of the Project, Enbridge submitted that it relies, in part, on keeping Project-related disturbances to within existing fence lines, scheduling activities to avoid sensitive periods, adherence to its Environmental Guidelines for Construction, a Project-specific Environmental Protection Plan (Project-specific EPP), and implementation of its existing EPP.

Views of the Board

The Board finds that the majority of the potential effects associated with the Project are minor in nature due to construction activities occurring within previously disturbed areas. Further, the majority of these effects are temporary (confined to the construction period) and most of the proposed work would be above-ground. The Board is of the view that many of the potential adverse environmental effects can be resolved through the use of standard design or routine procedures, as outlined in Enbridge's Application and related filings.

To maintain oversight of Enbridge's commitments, the Board has included **Condition 6** requiring Enbridge to file a Project-specific EPP in order to communicate all environmental protection procedures and mitigation measures to employees, contractors and regulators. The commitments should be as clear and unambiguous as possible to minimize errors of interpretation. In cases where there may be multiple ways of achieving the desired outcome, it is helpful to state the goal, mitigation options, and clear decision-making criteria for choosing which option to apply under what circumstances. Where a mitigation option is mandatory (e.g., abiding by a Restricted Activity Period), it should be clearly stated as such. The Project-specific EPP should also include maps of the environmental features immediately surrounding each Project Site, similar to an alignment sheet used in pipeline construction, and **Condition 6** also requires a Project-specific Archaeological Resource Contingency plan. The Board requires that Enbridge file the Project-specific EPP at least 30 days prior to commencement of construction at the first Project Site in order to allow sufficient time for an effective review process.

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[13] A standard mitigation measure is a specification or practice that has been developed by industry, or prescribed by a government authority, that has been previously employed successfully, and is now considered common or routine and generally meets the expectations of the Board.

6.2.6 Analysis of Potential Adverse Environmental and Socio-Economic Effects to be Mitigated Through Non-Standard Design and Mitigation Measures

6.2.6.1 Air Quality and Greenhouse Gas Emissions

Views of Enbridge

Enbridge stated that Project activities during construction, commissioning and operations at all Project Sites may result in emissions of criteria air contaminants as well as GHG emissions, but that these are expected to be localized in extent, short-term in duration, and small in magnitude.

Enbridge submitted that during operations no new continuous operation air emission sources are included in the Project components and activities. Although trace amounts of fugitive GHG emissions can be expected to escape from tanks, valves and fittings during pipeline and facility operation, such amounts are not anticipated to be substantive. The majority of GHG emissions during Project operation would be indirect emissions related to electricity consumption by the pumps at each of the Project Sites.

Enbridge noted that it tracks direct GHG emissions by region, and Line 9 emissions would be a portion of the recorded and reported values for the Enbridge Eastern Region. Historically, direct GHG emissions associated with fuel combustion, fugitive emissions and venting for the region have been between 1.2 and 1.8 kt CO_2e annually. Assuming full capacity and maximum horsepower operation, the indirect GHG emissions from the generation of the electricity consumed by the Project are anticipated to be approximately 6.7 kt CO_2e annually. This calculation used the provincial emission factors for electricity generation provided by Environment Canada to the United Nations Framework Convention on Climate Change in its National Inventory Submission for 2013 to reflect the proportional mix of generation facilities within the two provinces.

Enbridge noted that any GHG emissions associated with the Project are well below both provincial and federal reporting thresholds.

Views of Participants

Unifor (formerly Communications Energy and Paperworkers Union of Canada), Council of Canadians – York University Chapter, Martin Laplante, Hamilton 350.org, Équiterre (Coalition), Toronto Quakers PSAC Committee, Chiefs of Ontario, Dave Vasey, Bart Hawkins Kreps, Don McLean

The above Participants noted concerns regarding the sources and escalation of GHG emissions in Canada related to extraction and refining of oil sands.

> *Views of the Board*
>
> As discussed in Section 6.2.3, this assessment does not include an analysis of upstream or downstream GHG emissions. A discussion of the cumulative effects related to the Project is presented in Section 6.2.7.

In the Board's view, the amounts of GHG emissions due to the Project that are likely to escape from valves and fittings along Line 9 and that will result from the occasional use of equipment, vehicles and aircraft are negligible and are not likely to significantly increase.

Therefore, the Board is of the view that the likely residual effects of the Project on air quality and GHG emissions during both construction and operation would be low in magnitude, possibly reversible, of long-term duration, and that the Project is not likely to result in significant adverse effects on air quality.

6.2.6.2 Watercourse crossings

In addition to assessing the potential effects of the Project on the environment, the Board also considers the potential effects the environment may have on the Project.

Views of Enbridge

Enbridge submitted that the effects of the environment on the Project, including the increase in magnitude and frequency of extreme weather events in the region through which Line 9 travels, would not impact the operation of the Project. Enbridge also stated in its Revised Pipeline Risk Assessment that natural forces, system operations, appurtenances, third-party and ground movement threats would not change due to the Project.

As explained in Section 4.2.3.8 (RoW Inspections and Maintenance), Enbridge manages potential pipeline exposures through a number of measures. Enbridge's periodic RoW inspections identify threats such as high water levels, river scour, debris, pipeline exposure, or other phenomena that may affect the crossing integrity. Any sites along the pipeline that are identified as exposed, exhibit bank slumping that may detrimentally affect the pipeline, or exhibit other RoW conditions and that are evaluated as unacceptable would be remediated.

Depth of cover surveys are conducted every 10 years at minor crossings that exhibit lesser exposure risks, and every five years at major crossings. If low cover near a river crossing is identified, the crossing is assessed for remediation requirements. The assessment includes evaluation of any ILI anomalies, unsupported spans, potential loading, river conditions, crossing location, and consideration of landowner consultations.

Enbridge further explained that the applied-for Project would not result in any change to the current potential impacts on Line 9 due to flooding events, and that such impacts are managed through its current monitoring practices. Enbridge also responded to Board IRs regarding Enbridge's hazard assessment process and methods, including details surrounding spill modeling. Enbridge expressed a willingness to improve its modeling data inputs (including stream flows) through discussions with TRCA and Environment Canada.

Views of Participants

Participants made various submissions relating to concerns of existing conditions at a number of watercourse crossings along the length of Line 9, as well as several submissions expressing concern with watercourse crossing management and the potential for damage during extreme weather events.

Toronto and Region Conservation Authority

TRCA supplied a detailed spill risk case-study assessment in an effort to identify weaknesses in Enbridge's approach to watercourse crossing management and assessment of spill plume and consequence. TRCA submitted that Enbridge must take a proactive approach to ensuring the protection, mitigation and restoration of each of TRCA's nine watersheds.

Mohawk Council of Kahnawà:ke

MCK submitted that a watercourse crossing management plan be completed and implemented prior to granting LTO. They further recommended that:

- an independent task force be developed to determine the definition of a major watercourse taking into account flow characteristics, creek and bank materials, proximity to other relevant features, and local knowledge;
- wetlands be included in the list of crossings;
- larger, regulatory storms be included in flood volume and flood plain calculations where available;
- flood plains be determined for all major crossings;
- the flood volume frequency and extents be revised biannually or as data becomes available to take into account climate change; and
- the NEB determine maximum allowable timelines for pipeline deficiencies.

City of Toronto, Ontario Ministry of Energy

During final argument, both the City of Toronto and OME expressed support for a watercourse crossing management plan. OME expressed a preference for the plan being filed prior to LTO being granted.

Corporation of the City of Kingston, East End Against Line 9

Comments were provided noting concerns regarding the age of the pipeline and that inspection, maintenance and upgrading of watercourse crossings points has not been rigorous. Additional concerns noted impacts of changing climate and super storms on the pipeline and watercourse crossings.

Enbridge Reply

Enbridge submitted that filing a watercourse management plan after LTO would enable it to perform necessary field work in the spring, summer and fall months and thereby obtain seasonally distinct data and information, rather than having only a portion of the spring in which to do so.

Views of the Board

Enbridge's submission and responses, as well as the submissions received from Participants, were assessed against the increase of spill risk presented by the Project which is discussed in detail in Section 4.3.1 of these Reasons. Although the locations identified by the Revised Pipeline Risk Assessment are not along watercourses, typically when an increase of risk is identified, the condition of the potential receiving environment should be revisited, in order to develop a robust baseline. The Board is of the view that any minimal increase in risk at watercourses can be managed by clear and consistent application of Enbridge's existing programs.

Section 48 of the OPR states as follows:

> *"A company shall develop, implement and maintain an environmental protection program that anticipates, prevents, manages and mitigates conditions that could adversely affect the environment."*

The Board is of the view that imposing conditions specific to the ongoing management of watercourse crossings would highlight the importance of clear communication and consistent application of Enbridge's EPP. However, the Board is mindful of concerns expressed by Participants regarding the gathering of a full suite of seasonal data and ensuring effective management of watercourse crossings in the interim. In order to address this, the Board is imposing **Condition 18** and **Condition 25** requiring the development of a Watercourse Crossing Management Plan (WCMP), and a subsequent data update, in order to establish a new baseline condition assessment of the major watercourse crossings to be incorporated as part of Enbridge's EPP.

With respect to the development and subsequent update of the WCMP, Enbridge is directed to harmonize its definition of a major watercourse with the criteria adopted for determining valve placements required by **Condition 16**. The criteria used must meet or exceed the expectation of CSA Z662-11 clause 4.4.8, note (2).

The Board is of the view that when the proposed mitigation and the imposed conditions are effectively implemented the potential effects of the Project on watercourse crossings present a small incremental increase over existing conditions, and would be low in magnitude, reversible, and of medium-term duration. Therefore, the Board is of the view that the Project is not likely to result in an incremental significant adverse effect at watercourse crossing locations. Finally, the information required to be produced by Enbridge pursuant to this Section or the conditions referenced in this Section, including the WCMP and updates thereto, shall also be made available on request to affected landowners (including municipalities) and Aboriginal groups, as well as conservation authorities, as per the Board's direction in Section 3.2.1 of these Reasons.

6.2.6.3 Noise

Views of Enbridge

Enbridge completed an Environmental Noise Assessment for the proposed Project dated 27 November 2012. This initial Noise Assessment indicated that there were potential exceedances of regulatory requirements regarding noise levels at the CD and HL stations. Over the course of the Board's assessment of the Application, Enbridge revised the equipment proposed and submitted an Updated Noise Assessment dated 26 April 2013. The Updated Noise Assessment indicated an existing predicted exceedance at CD for night-time noise levels (current configuration, eastward flow) only. Enbridge proposed mitigation in the form of silencers for the Rooftop Exhaust Fans. Enbridge submitted a Final Updated Noise Assessment dated 9 September 2013 based on revisions to the Project description. The conclusions from the Final Updated Noise Assessment are that no adverse impacts are anticipated, and levels are predicted to meet the applicable Ontario noise guidelines at the respective sites with the exception of CD. With respect to CD, the Final Updated Noise Assessment recommends Enbridge consider the use of silencers for the Rooftop Exhaust Fans for current operations of the site.

Views of the Board

The Board requires additional noise monitoring by Enbridge to ensure compliance with Ontario and Quebec provincial guidelines. The Board has imposed **Condition 23** which requires Enbridge to file within six months of the Project going into service:

- the results of post-construction noise monitoring at the six Project Sites; and
- if necessary, a noise control plan to ensure that the Project will comply with Ontario or Quebec provincial noise guidelines.

The Board is of the view that the potential effects of the Project on noise would be low in magnitude, reversible, though of long-term duration. The Board is of the view that, with the conditions it is imposing and the implementation of Enbridge's commitments and mitigation measures, Project noise is not likely to result in significant adverse effects on the receiving environment.

6.2.7 Cumulative Effects

The assessment of cumulative effects considers the impact of the predicted likely residual effects associated with the Project in combination with the likely residual effects from other projects and activities that have been or will be carried out, within the appropriate temporal and spatial boundaries and ecological context. Cumulative effects assessment differs from conventional project-specific effects assessment by considering larger geographic study areas, longer time frames and unrelated projects or activities. The key difference between determining the significance of project-specific effects and of cumulative effects is the consideration of other projects and activities in a cumulative effects assessment.

The Board considers cumulative effects in four steps by:

1. First, considering the environmental effects of the Project and whether, after the applicant implements mitigation, residual effects are likely.
2. If no likely residual effects from the Project are predicted, further analysis of cumulative effects is not required.
3. If likely residual effects are predicted, the Board considers the potential for those effects to interact both temporally and geographically with the likely effects of other past, present and reasonably foreseeable future projects and activities.
4. If there is interaction, the combined effects are considered along with proposed mitigation, and the significance and the relative contribution of the residual project effect of the cumulative effect will be considered.

Views of the Board

Construction Phase

The Board notes that the likely residual effects related to Project construction are associated with temporary and localized increases in air emissions (including GHGs) and noise levels due to the use of vehicles and equipment.

The Board is of the view that the associated effects of construction-related air emission and noise level increases are temporary (in the order of a few months) and relatively minor in nature. Levels in both cases would return to the current baseline following completion of construction. Any interactions of these effects with air emissions and noise levels from other projects and activities in the vicinity would also be temporary. Such unavoidable, temporary and relatively minor construction-related emissions (noise and air) would be negligible (i.e., not measureable or not discernable within natural variation) and not likely to meaningfully contribute to cumulative effects.

Operations Phase

The Board notes that beyond the changes in product, flow direction and operating technique, Project operation remains essentially unchanged from what is currently authorized and regulated by the Board. After mitigation is applied, operational noise levels are predicted to remain within provincial guidelines, with the exception of those occurring during maintenance activities or RoW patrols. Limited operational air emissions would also be associated with these occasional activities. In the Board's view, although residual effects from these occasional emissions increases are likely, they would be very minor and of short duration, and would be negligible and not likely to meaningfully contribute to cumulative effects.

Additionally, the Board notes that trace GHG emissions would likely escape from valves and fittings during pipeline operation. The Board does not consider that this increase in trace emissions would increase total GHG emissions by any order of magnitude that alters the reportable emissions and, therefore, would be negligible and not likely to meaningfully contribute to cumulative effects.

6.3 Socio-Economic Matters

The Board expects companies to identify and consider the impacts a project may have on socio-economic conditions including the mitigation of negative impacts and the enhancement of project benefits. Socio-economic effects that are caused by changes to the environment are included in the ESA in Section 6.2.

Direct socio-economic effects caused by the existence of the Project itself are discussed below. Other economic effects such as the economic impacts on Canada resulting from the Project are discussed in Chapter 8, Economic Feasibility.

6.3.1 Infrastructure and Services

Views of Enbridge

Enbridge submitted that the delivery of construction materials, equipment and the daily movement of construction workers are expected to cause a slight increase in traffic at each Project Site. Enbridge also committed to maintaining open lines of communication with stakeholders informing them of the Project and construction schedule. Consequently, Enbridge submitted that adverse residual effects are not predicted to be significant.

In its ESEIA, Enbridge submitted that the construction workforce for the Project would require accommodation services for a maximum of 40 people at each of the existing station and terminal Project Sites for a period of 7 months. Short-term employment opportunities and the purchase of local materials, food and accommodation may also increase during periods of Project maintenance, thus resulting in the prediction that the Project would have a positive impact.

6.3.2 Employment and Economy

Views of Enbridge

In its ESEIA, Enbridge stated that the Project would result in positive impacts on employment and economy through construction and operation contracting opportunities to qualified local businesses and the employment of local workers whenever possible. The Project is expected to create a total of 3 permanent positions and may require up to 40 temporary construction workers at each of the existing station and terminal Project Sites.

Enbridge submitted as part of its evidence a report prepared by Demke Management Ltd. (Demke Report) which concluded that the direct impacts from the Project include $1.6 billion in construction spending and pipeline transportation revenues over 30 years (60% would occur in Ontario and 40% in Quebec). Enbridge also expects the Project to have positive indirect business effects through the purchase of local materials, food and accommodation for workers. Consequently, Enbridge submitted that Project construction and operations are predicted to result in short-term positive residual effects on local resource use and long-term, positive residual effects on local employment and economy.

Views of Participants

Progressive Contractors Association of Canada (PCA), TDT Crews

PCA stated that the Project will provide expanded work opportunities for PCA member companies and their employees. TDT Crews stated in their Letter of Comment that the Line 9B Reversal Project needs to move forward because it would generate good-paying jobs.

Views of the Board

The Board requires NEB-regulated companies to identify and consider the socio-economic effects of projects on individuals, groups, communities and society in general. This includes consideration of a project's positive and negative socio-economic impacts, as well as any proposed measures to enhance benefits and mitigate negative impacts.

No material concerns were raised by Enbridge or Participants or identified by the Board in respect of the impact on existing infrastructure or services.

The Board is satisfied that the Project would provide positive employment and economic benefits through construction contracting opportunities to qualified local businesses and the employment of local workers whenever possible.

6.4 Land Matters

The Board's Filing Manual sets out its expectations for lands information to support an application for an Order under section 58 of the NEB Act. In general, applicants must provide a description and rationale for the proposed route of the pipeline, the location of associated facilities, and the permanent and temporary lands required for the Project. This information permits the Board to assess the appropriateness of the proposed route, land requirements and the applicant's land acquisition program. Since the Project relates to an existing, currently operating pipeline, and requires no new RoW, route selection concerns do not apply.

6.4.1 Land Area and Land Requirements

Views of Enbridge

In describing the land use context of the Project, Enbridge explained that the land in the vicinity of the Project Sites has a combination of agricultural, rural, urban and industrial uses.

Enbridge stated that no new permanent land rights, including new footprint or modified rights over the existing footprint, are required for the Project. All work associated with the Project would occur within the existing site boundaries on lands owned by Enbridge or on TWS as described in Section 6.1. Enbridge submitted that the minimal requirement for new infrastructure reduces the impact of the Project on the environment and to stakeholders.

6.4.2 Land Acquisition Process

Views of Enbridge

Enbridge confirmed that it is in consultation with the industrial landowner for the TWS near ML and committed to having all appropriate land authorizations in place prior to Project construction.

Views of the Board

The Board considers Enbridge's land area and land requirements to be acceptable since Project work would occur almost entirely within existing site boundaries on previously disturbed Enbridge RoW. The Board acknowledges Enbridge's efforts to minimize the potential impact of the Project on the environment and to stakeholders by proposing modifications to existing facilities and minimal work outside the existing footprint. The Board also finds that Enbridge's anticipated requirements for TWS land rights are acceptable, and that Enbridge's process for acquiring TWS is also acceptable.

Chapter 7

Aboriginal Matters

As a quasi-judicial decision-maker, the Board must ensure that its process complies with the principle of fairness and the rules of natural justice. In addition, the Board interprets its responsibilities, including those outlined in section 58 of the NEB Act, in a manner consistent with the *Constitution Act, 1982,* including section 35.

The Board takes the interests and concerns of Aboriginal groups into consideration before it makes a decision that could have an impact on those interests. Whenever a project has the potential to impact the rights and interests of Aboriginal groups, the Board obtains as much evidence as possible in that regard so that it may assess and consider the potential impacts in its final decision. The Board relies on both its hearing process and its Enhanced Aboriginal Engagement (EAE) initiative. The Board's EAE initiative involves proactive contact with Aboriginal groups that may be affected by a proposed project, and seeks to assist Aboriginal groups with understanding the Board's regulatory process and how to participate in that process. The Board also sends letters based on a review of traditional territory information to each potentially impacted Aboriginal group identified, informing them of the project as well as the Board's regulatory role in respect of the project, and offers to provide further information on the hearing process. Following issuance of these letters Board staff follow up, respond to questions, or conduct information meetings where requested.

Proponents are also required by the Board's Filing Manual to identify, engage and consult with potentially affected Aboriginal groups before filing a project application. The Board's Filing Manual requires proponents to consult with potentially impacted Aboriginal groups early on in the project planning and to report on these activities to the Board. Further, the Filing Manual requires that an application include detailed information on any issues or concerns raised by Aboriginal groups or that are otherwise identified by the proponent.

In addition to providing technical information addressing impacts of a project on, among other things, fisheries, wildlife, vegetation, and heritage resources, a proponent is required to make all reasonable efforts to consult with potentially affected Aboriginal groups and to file information about those consultations with the Board. This includes evidence on the nature of the interests and concerns of Aboriginal groups potentially affected, the concerns that were raised and the manner and degree to which those concerns have been addressed. The proponent is most often in the best position to respond to Aboriginal concerns about a project before an application is filed and while the project is still in the early stages of development.

The Board evaluates the sufficiency of the proponent's consultation process along with any other evidence of consultation filed on its record. The proponent is expected to report on all interests and concerns of Aboriginal groups that were expressed to it, even if it was unable or unwilling to address those concerns. Where there is a greater risk of more serious impacts on Aboriginal rights and interests, the Board will have greater expectations in terms of the proponent's consultation with the potentially impacted Aboriginal group. Where there is a remote possibility of an impact on interests and concerns of Aboriginal groups, or the impacts are minor in nature, the proponent's consultation will generally not be expected to be as extensive. Aboriginal groups are encouraged to engage with proponents so that their concerns are identified early, considered by the proponent, and potentially resolved before the application is filed.

In addition to the one-on-one consultation that occurs between proponents and Aboriginal groups, it should also be understood that the Board's hearing process itself is part of the overall consultative process. Aboriginal groups who are concerned with the potential impact of a proposed project on their rights and interests may present their views directly to the Board.

Aboriginal Participants have presented their views to the Board in a variety of ways (e.g., intervenor evidence, letter of comment, final argument). For those who are Intervenors, the Board has the PFP in place that may assist with participation in the Board's process.

It is through this process that the Board is able to understand and consider the rights and interests of Aboriginal groups that may be impacted by a project. Further, the Board's hearing process allows for Participants to be fully aware of the evidence that the Board will consider in its decision-making process.

Before making its decision on a project, the Board will assess the completeness of its process to ensure all potentially affected Aboriginal groups had a reasonable opportunity to make their concerns known to the Board. It will consider all of the relevant information before it, including information regarding the consultation undertaken with Aboriginal groups, the views of Aboriginal groups, project impacts on rights and interests of Aboriginal groups and proposed mitigation measures. In assessing the potential impacts of a project and determining whether it is in the public convenience and necessity, the Board considers the nature and extent of the interests and concerns of Aboriginal groups in the context of how the project may affect such interests. The Board also takes into consideration proposed measures that would avoid or mitigate project impacts on the rights and interests of Aboriginal groups. The Board then considers all of the benefits and burdens associated with the project, balancing the interests and concerns of Aboriginal groups with other interests and factors, before determining whether the project is in the public interest.

7.1 Participation of Aboriginal Groups and Aboriginal Engagement

For the Project, the NEB began its EAE work after the receipt of the Pre-Application Information filing on 11 October 2012.

The following 14 Aboriginal groups and organizations were identified by Enbridge in its Application:

- Alderville First Nation
- Hiawatha First Nation
- Mississaugas of the New Credit First Nation

- Mohawks of the Bay Quinte
- Six Nations of the Grand River
- Kahnawà:ke First Nation
- Kanesetake First Nation
- Mohawks of Akwesasne
- Aamjiwnaang First Nation
- Walpole Island First Nation
- Chippewas of Kettle and Stony Point
- Chippewas of the Thames First Nation
- Munsee-Delaware First Nation
- Oneida of the Thames

Subsequently the Board identified an additional five Aboriginal groups and organizations:

- Caldwell First Nation
- Moravian of the Thames First Nation
- Métis Nation of Ontario
- Métis Nation of Ontario Credit River Métis Council
- Métis Nation of Ontario, Grand River Métis Council

The NEB mailed letters to the 19 Aboriginal groups on 8 February 2013 informing them of the Project as well as the Board's regulatory role in respect of the Project. Following issuance of these letters, Board staff followed up with telephone calls in order to respond to questions or arrange information meetings, where requested. The following three groups requested and were provided information meetings on the Board's hearing process: Caldwell First Nation and Mohawk Council of the Kahnawà:ke on 4 April 2013; Mohawk Council of the Kahnawà:ke on 31 July 2013; and, Mississaugas of the New Credit First Nation on 3 April 2013.

Eleven Aboriginal groups, individuals, organizations or organizations with Aboriginal membership participated in the OH-002-2013 proceeding as outlined in Table 7-1.

Table 7-1 Aboriginal Participants

	Level of Participation	Filed Letter of Comment	Filed Evidence	Final Argument
Aamjiwnaang First Nation	Intervenor		●	●
Chippewas of the Thames First Nation	Intervenor		●	●
Mohawk Council of the Kahnawà:ke	Intervenor		●	●
Mississaugas of the New Credit First Nation	Intervenor		●	●
Grand River Indigenous Solidarity	Intervenor		●	●
Williams Treaties First Nations	Commenter	●		
Ontario Council of Chiefs	Commenter	●		
Mr. Jesse McCormick	Intervenor		●	●
Ms. Carrie Lester	Intervenor		●	●
Rising Tide Toronto	Intervenor		●	●
Mohawk Council of Kanesatake	Commenter	●		

As stated in Section 2.3.2, the following Aboriginal Participants applied for and received PFP funding to participate in the proceeding: Aamjiwaang First Nation; Chippewas of the Thames First Nation; and, Mississaugas of the New Credit First Nation.

Views of Enbridge

Enbridge submitted that it instituted an enterprise-wide Aboriginal and Native American Policy (Aboriginal Policy) to foster successful working relationships with Aboriginal communities in the areas where it operates its pipelines. Its Aboriginal Policy outlines key principles for relations with Aboriginal communities, including respect for traditional ways and land, heritage sites, the environment, and traditional knowledge. Enbridge applied principles of its Aboriginal Policy to guide its Aboriginal engagement activities for the Project, including: developing relationships; exchanging information about the Project; hearing Aboriginal concerns; responding to such concerns; and, ensuring on-going dialogue about the Project, its potential impacts and benefits.

Enbridge began implementing its Aboriginal Policy for the Project in May 2012. Although the Project would take place within existing Enbridge properties and RoW with a small area of TWS required outside of the RoW at one Project Site for the duration of construction, and does not involve work on Crown lands, in consideration of the level of interest and heightened awareness of Enbridge activities in Eastern Canada, Enbridge broadened its Aboriginal engagement strategy to proactively engage Aboriginal communities within approximately 50 km of the entire Line 9 RoW, adding those between Westover and Sarnia.

Enbridge stated that it performed the following Project-specific engagement activities with all the 19 Aboriginal groups identified above:

- Distributing mailouts and Project information materials;
- Follow up telephone calls;
- Aboriginal Community open houses;
- Face-to-face meetings and Project presentations;
- Community visits and information drop offs; and
- Ongoing issues tracking and follow up activities.

Enbridge filed overviews of its ongoing mailouts, meetings, phone calls and discussions with Aboriginal groups in its Aboriginal Engagement Activities Summaries.

In addition, Enbridge submitted that as part of its ongoing operational relationship, it looks for opportunities to meet with Aboriginal communities to share the details of its existing public awareness plans and to help it understand how local Aboriginal knowledge may inform and/or enhance those plans. Enbridge stated that it is committed to engaging with any Aboriginal communities or organizations that come forward and self-identify as being affected by the Project. Finally, Enbridge committed to be available to meet with Aboriginal communities, upon request, to provide information and updates about the Project, respond to inquiries, solicit Project-specific issues, obtain information and respond to concerns that may arise.

Views of Aboriginal Participants

Aboriginal Participants in this proceeding were critical of Enbridge's efforts to engage them concerning the Project and also expressed concerns regarding Crown consultation. Aboriginal Participants argued that because these efforts were insufficient the potential impacts of the Project on Aboriginal interests are not fully understood or addressed. Examples of such concerns that were expressed in this proceeding are provided below.

Aamjiwnaang First Nation (AFN)

AFN applied for intervenor status and was provided PFP funding to participate in the NEB process. In his sworn affidavit, Chief Chris Plain stated that Enbridge's efforts to engage AFN about the Project have been insufficient and did not meaningfully address its concerns about potential health impacts and impacts on its Aboriginal and treaty rights.

Mohawk Council of Kahnawà:ke

MCK submitted in its written evidence that the engagement activities Enbridge reported to the Board consisted of Enbridge providing basic information on the Project and exchanges of correspondence in an effort to schedule follow-up meetings. MCK asserted that no meaningful engagement or information exchanges occurred between MCK and Enbridge during the period reported in Enbridge's summary. MCK also cautioned the Board not to interpret each meeting or exchange between Enbridge and a First Nation as qualifying as a meaningful engagement.

MCK also stated in its oral final argument that the potential significant impacts of an incident during the operational phase of the Project warrant greater engagement than the minimal activities that Enbridge undertook. MCK asserted that the open houses Enbridge hosted and responses to information requests were not adequate to address concerns raised by MCK or other Aboriginal Participants.

MCK submitted that Enbridge should update the Ongoing Engagement Report (current Part III Order **Condition 24**) contained in the Draft Potential Conditions attached to NEB Procedural Update No. 4, every six months for the first three years of operation, and also every year thereafter for the duration of the pipeline's operations.

Chippewas of the Thames First Nation (COTTFN)

COTTFN received PFP funding to participate as an Intervenor in this proceeding. COTTFN submitted in their written evidence that Enbridge's efforts to engage its members about the Project have not meaningfully addressed their concerns about potential health impacts and impacts on COTTFN's Aboriginal and treaty rights.

Mississaugas of the New Credit First Nation

MNCFN applied for and were granted PFP funding to participate as Intervenors in this proceeding. They submitted IRs to Enbridge, were granted an extension to file evidence pursuant to Ruling No. 16, and provided written final argument. MNCFN stated in their evidence that Enbridge does not actively consult with or address MNCFN concerns regarding the ongoing O&M of Line 9.

Williams Treaties First Nations (WTFN)

WTFN submitted a letter of comment which stated that information must be provided in a culturally sensitive manner that acknowledges First Nations' needs and the lack of capacity that exists for most First Nation communities wanting to participate in environmental advocacy initiatives to steward their lands, waters and air.

Mohawk Council of Kanesatake

Mohawk Council of Kanesatake applied to participate as a Commenter late in the hearing process, and pursuant to Ruling No. 22 were granted participation in this proceeding as requested by submitting a Letter of Comment. Mohawk Council of Kanesatake submitted that Enbridge failed to engage with them meaningfully about Line 9. It stated that the transmission of template letters, by mail, to all stakeholders who may be generally affected is insufficient and inadequate.

Grand River Indigenous Solidarity

GRIS participated as an Intervenor and expressed concerns in its written evidence about Enbridge's consultation activities, stating that Enbridge only notified affected Aboriginal groups of the Project rather than undertaking a process of meaningful consultation.

Carrie Lester

Ms. Lester expressed frustrations with the complexity of the NEB process in her oral final argument. Specifically, Ms. Lester stated the process was time consuming, inconvenient and that the volume of reading required to participate was onerous.

Jesse McCormick

Mr. McCormick stated in his written final argument that the commitments made by Enbridge in its Aboriginal Policy are hollow and stated that Enbridge has demonstrated no commitment to First Nations in relation to contracting, training, equity or environmental stewardship for the Project.

Rising Tide Toronto

Rising Tide Toronto stated in its oral final argument that Enbridge had not engaged in sufficient consultation processes within indigenous communities and, as a result, Enbridge was not aware of several sacred burial sites, outstanding land claims and treaty violations.

Enbridge Reply

In response to assertions that Enbridge's consultation and engagement activities with Aboriginal groups were inadequate, Enbridge stated that by implementing its Aboriginal engagement program it provided Project information, provided opportunities for each Aboriginal group to express concerns about the Project (including their views on impacts and Aboriginal and treaty rights), and addressed those concerns, as applicable. Enbridge shared Project information by sending notices and written Project information, inviting Aboriginal groups to open houses, and attending in-person meetings.

In light of these efforts, Enbridge submitted that the record in this proceeding demonstrates that all Aboriginal groups potentially affected by, or that have an expressed interest in the Project, were provided with Project information and offered various opportunities to make their views known to Enbridge and to the Board.

7.2 Impacts of the Project on Aboriginal Groups

Views of Enbridge

Enbridge submitted that, with the exception of some TWS adjacent to ML, the Project would take place entirely within the confines of Enbridge's existing and operating terminals and stations, which are privately owned or controlled by Enbridge, or along the existing Enbridge RoW on privately owned land. No Crown land is involved, current land use at the Project Sites is incompatible with any traditional land use (TLU), and the lands are not currently being used for the purposes of exercising traditional rights. Enbridge based this assertion on its history of operating pipelines and facilities in Ontario and Quebec, including the existing Line 9 RoW, for over 30 years.

Enbridge further stated that its overarching objective and business priority is to ensure the safety and reliability of their delivery systems for the people who live and work near their pipeline systems across North America, their employees and their customers. Enbridge submitted a Revised Pipeline Risk Assessment which concluded that increasing Line 9's capacity would result in an increase in assessed risk for 2.2% of Line 9. In other words, 60 of the 2,730 total 305-metre long pipeline sections between ML and SA display an increase in risk. Enbridge further submitted that the changes in risk due to the Project are minimal, and the risk control and mitigation strategies currently being executed by Enbridge manage the potential resulting impacts.

Views of Aboriginal Participants

Most Aboriginal Participants expressed a concern regarding a spill from Line 9 impacting their TLU activities. Aboriginal Participants also expressed concerns regarding the original approval of Line 9 and with respect to the existing Line 9 O&M activities. Additionally, some Aboriginal Participants expressed concerns regarding Project impacts on archaeological and heritage resources. Examples of such concerns that were expressed in this proceeding are provided below.

Aamjiwnaang First Nation

AFN provided a preliminary TLU study that described traditional practices carried out by current land and resource users from AFN in proximity to the Line 9 RoW, and which it asserted may be affected by the Project or by any spill, leak, or discharge of oil that occurs on Line 9 in the future. In his sworn affidavit, Chief Chris Plain expressed concerns that a spill from Line 9 would have the potential to seriously impact the health of AFN community members, as well as their Aboriginal and treaty rights. AFN stated in their oral final argument that it is specifically concerned about the impact a spill may have on the waterways it uses for traditional purposes, such as Talfourd Creek and the St. Clair River which are in the vicinity of the Sarnia Terminal.

AFN also expressed concerns that the capacity increase on Line 9 would increase emissions at the nearby Sarnia Terminal which would worsen the health effects of the Project on its community. AFN stated in its written evidence that the health, environmental and socio-economic effects of potential spills, leaks and discharges, as well as the amount of new, additional toxic air contaminants and air pollution that would be released at the Sarnia Terminal as a result of Line 9 operations, must be considered.

Chippewas of the Thames First Nation

COTTFN submitted a preliminary TLU study where COTTFN members identified specific sites and hunting grounds throughout the Thames River watershed where they continue to harvest a variety of species of fish, birds, and mammals and gather medicine, maple sap, and other flora, including at sites that are directly adjacent to the Line 9 RoW. Chief Joe Miskokomon expressed concerns in his sworn affidavit that spills, leaks, and discharges from Line 9 in the operational phase of the Project have the potential to cause new adverse impacts on their use of land and use of the Thames River for traditional purposes. COTTFN stated in their evidence that these activities are protected by their Aboriginal and treaty rights, and that discharges from Line 9 would cause direct health impacts to COTTFN members, and destroy or severely and irreparably damage their traditional territory.

Mississaugas of the New Credit First Nation

MNCFN stated in their written evidence that they share similar concerns to AFN and COTTFN about the impact that a spill from Line 9 would have on their ability to practice their Aboriginal rights and traditional activities, such as harvesting plants for medicine. Moreover, MNCFN believes that the integrity dig program that Enbridge is planning alongside the reversal and capacity expansion increases this risk. MCNFN view the 2013 and 2014 integrity dig program as being inseparable from the Project and submitted that those related impacts should be considered by the Board in this proceeding. This is because MCNFN believe that the integrity dig program could potentially result in the destruction of archaeological resources, as could the ground disturbance work required during spill cleanup. In their written final argument, MNCFN rejected Enbridge's arguments that there are no archaeological resources in need of protection that would require an archaeological assessment because the Project involves activities on previously disturbed land. Therefore, MNCFN submitted that Enbridge must hire Aboriginal monitors and conduct an archaeological assessment for any work site that has high archaeological potential or has significant environmental concerns.

Mohawk Council of Kahnawà:ke

MCK stated in their written evidence that they rely on the bodies of water in proximity to Line 9 as a source of drinking water. They expressed concerns that if an incident causes the release of oil from Line 9, the rights, interests and traditional territories of MCK would be directly impacted. MCK assert that the limited scope of the Project ESEIA and its proposed mitigation fail to address these potential impacts. Therefore, MCK recommended that Enbridge be required to address community-specific concerns in a report to MCK and the Board. MCK also requested that Enbridge produce details as to its emergency response plan in the event that an oil release impacts MCK's 24-hour drinking water reserve. In its final oral argument, MCK recommended a condition for Enbridge to include consultation with First Nations in developing and updating the emergency procedures manual.

Grand River Indigenous Solidarity

GRIS asserted in their written evidence that a spill along Line 9 would negatively impact all those who rely on the water and land that the pipeline crosses.

Rising Tide Toronto

Rising Tide Toronto expressed concerns in its final argument about the Project causing disturbances to heritage resources and sites of historical or spiritual importance. Rising Tide Toronto also expressed concerns that the Project may cause environmental damage that would impact subsistence and TLU activities, as well as negative health effects to those communities that use resources near Line 9.

Jesse McCormick

Mr. McCormick submitted in his written final argument that Enbridge ought to be required to conduct an archaeological assessment, and also submitted that if heritage resources are discovered during construction or during an archaeological assessment of any of the Project Sites, Enbridge must notify potentially impacted or interested Aboriginal communities and stop work until an appropriate course of action has been agreed upon by Enbridge and the impacted or interested Aboriginal communities.

Enbridge Reply

Enbridge submitted that when considering impacts of the Project on the rights and interests of Aboriginal groups, it is fundamentally important to keep in mind that aside from some TWS land requirements, the Project would take place entirely on previously disturbed lands within the confines of existing, and operating terminals and stations that are privately owned or controlled by Enbridge. Furthermore, Enbridge submitted that the Project would involve no planned ground disturbance along the RoW and that impacts of the Project on Aboriginal rights and interests would be minimal and appropriately mitigated.

Enbridge stated it is committed to working with First Nations and their communities throughout the lifecycle of Line 9. With respect to concerns about the impact of leaks and spills on traditional activities, Enbridge committed to providing additional opportunities to First Nations members to tour and observe Project work with respect to Enbridge's day-to-day operations in the region. Enbridge submitted that this should facilitate an improved understanding of Enbridge's practices and emphasis on safety. Furthermore, Enbridge committed to including First Nations when developing and updating the emergency procedures manual as it fulfills its requirements under section 33 of the OPR.

In response to the concerns of Rising Tide Toronto, MNCFN and Mr. McCormick regarding heritage resources and important historical and spiritual sites, Enbridge submitted that it would comply with all regulatory requirements and consult with the appropriate communities in the event of any discovery of heritage or culturally sensitive sites or artifacts pre- or post-construction.

Enbridge submitted that it has been working with AFN to understand the potential impacts of the Project and to explore means of addressing the issues that AFN has raised. Enbridge has also been working with COTTFN to build capacity for technical review of the Project, and to develop TLU information for the purpose of identifying sensitive areas and Project-related concerns. Enbridge stated that it has, to the extent practicable, addressed the concerns raised by Aboriginal groups about the Project. Enbridge also rejected AFN's claims that an additional tank would be added at the Sarnia Terminal allowing for an increased amount of crude oil to be stored there.

Enbridge committed to exploring opportunities for meaningful economic participation by First Nations, as well as continuing to create opportunities for education and training necessary to build First Nations capacity for economic participation. In light of Enbridge's Aboriginal

Engagement Program activities and commitments, Enbridge submitted that it has satisfied the requirements for consultation with Aboriginal groups.

Views of the Board

Aboriginal Participation and Engagement

The Board's process is designed to be thorough and allow Participant Aboriginal groups to make their concerns known to the Board and to have those concerns considered before the Board's final decision. This is achieved, in part, by requiring proponents such as Enbridge to fulfil the requirements of the NEB Filing Manual. The Board requires applicants to initiate early discussions and consultation with Aboriginal groups potentially affected by a proposed project. This allows for early exchange of information and for matters of concern to be considered at the onset of the Project and throughout the lifecycle of the Project. The extent of engagement that needs to be carried out is determined, to a large extent, by the nature, scope and setting of a project. The Board also encourages Aboriginal participation through its EAE.

The Board reiterates that it is not assessing the current operating Line 9 or its related ongoing O&M activities. Rather, the Project to be assessed in this proceeding is as follows:

- The additions and modifications at the Project Sites and resulting necessary changes to related procedures and commitments required to reverse crude oil flow between North Westover, Ontario and Montreal, Quebec;
- The additions and modifications at the Project Sites and resulting necessary changes to related procedures and commitments to enable an increase in annual capacity from Sarnia, Ontario to Montreal, Quebec; and
- The revision to the Line 9 Rules and Regulations Tariff to allow for the transportation of heavy crude.

The Board notes that no new permanent land rights, including new footprint or modified rights over the existing footprint, are required for the Project. All station and terminal modifications required for the Project would occur within the existing site boundaries on lands owned by Enbridge. The Project would require additional TWS lands for construction infrastructure such as stockpile sites, staging areas and vehicle parking at the NW, HL, CD and at ML. At each of the Ontario Project Sites, the additional TWS lands would be located outside of and adjacent to the facility fence-lines, but within the legal boundaries of the Enbridge properties. Only at the ML Project Site would there be additional TWS lands located outside of the Enbridge property boundary. No Crown land is involved with this Project.

Given the scope of the Project, the Board is satisfied that all Aboriginal groups potentially affected by the Project were provided with sufficient information about the Project. Enbridge's Aboriginal Engagement Activities Summaries, which were filed as evidence in this proceeding, and the participation by Aboriginal groups in the Board's process, demonstrate that potentially affected Aboriginal groups and individuals had an opportunity to make their views known to Enbridge and to the Board.

The Board expects Enbridge to continue to consult with Aboriginal groups throughout the construction and operation phases of the Project, and to respond to potentially affected Aboriginal groups. **Condition 24** provides for an Ongoing Engagement Report to be filed with the Board in relation to the exchange of information between interested parties including Aboriginal groups, and for Enbridge to report on mutually agreed-upon solutions. As discussed in Chapter 3 of these Reasons, **Condition 29** also requires Enbridge to file a plan for continued engagement with persons and groups during operation of Line 9.

Impacts on Aboriginal Groups

The Board considered all the relevant information before it, including information regarding the consultation undertaken by Enbridge with Aboriginal groups, the views of Aboriginal groups in their evidence and final arguments, Project impacts on the rights and interests of Aboriginal groups, and proposed mitigation measures.

The Project occurs within Enbridge's existing RoW on previously-disturbed land and no Crown land is involved. The Board is not assessing the current operating Line 9 or its related ongoing O&M activities in this proceeding. Given the limited nature, scope, and setting of the current applied-for Project, and considering the mitigation proposed, commitments made by Enbridge and conditions imposed by the Board as described throughout these Reasons and reflected in the attached Order, the Board is of the view that impacts on TLU are unlikely to occur as a result of the Project.

The Board notes that although the Project occurs on previously-disturbed lands and does not traverse any Indian Reserves or Crown land, it is on lands used by Aboriginal groups for traditional purposes. The Board notes the concerns of Mr. McCormick, Rising Tide Toronto and MNCFN regarding the discovery of heritage resources during Project construction and operation and maintenance. Regarding these issues as they relate to the construction activities associated with the Project, the Board has imposed **Condition 6** which requires Enbridge to file a Project-specific EPP containing a Project-specific Archaeological Resource Contingency plan 30 days prior to commencing construction.

In carrying out this Project-specific Archaeological Resource Contingency plan, the Board expects Enbridge to consult with all potentially affected Aboriginal groups, as well as the Board, in the development of an appropriate mitigation plan in the event that any artifacts or other cultural features of note are discovered pre- or post-construction. Further, the Board expects Enbridge to apply, as appropriate, any improvements from its Project-specific Archaeological Resource Contingency plan to its O&M Procedures and its Environmental Guidelines for Construction. The Board further notes that the NEB's O&M Requirements and Guidance Notes require companies to engage parties whose rights or interests may be affected by O&M, prior to undertaking those activities.

The Board recognizes the potential for impacts on TLU if there is a spill on Line 9. Safety and environmental protection are of paramount importance to the Board, and the NEB's regulatory oversight is designed to proactively manage safety and environmental protection throughout the entire lifecycle of a pipeline, from design to construction, operation and through to abandonment. The Board is satisfied that, in light of Enbridge's commitments and the conditions imposed by the Board, Enbridge will continue to safely operate Line 9, protect the environment, and maintain comprehensive emergency response plans that are developed in consultation with regulatory agencies, appropriate stakeholders and communities and in accordance with the OPR and that address regional priorities and high consequence areas such as major water crossings and residential communities. Additionally, **Condition 26** directs Enbridge to include Aboriginal groups in Enbridge's continuing education program (including emergency management exercises), liaison program and consultation activities on emergency preparedness and response.

As noted above, the Board is satisfied with the level of Aboriginal engagement Enbridge conducted for the Project given the nature and scope of its Application. The Board also notes the commitment from Enbridge to work with Aboriginal communities throughout the lifecycle of Line 9. The Board expects Enbridge to honour its commitments to build capacity and work with Aboriginal groups and their communities through the lifecycle of the Project. The result of these ongoing engagement activities should be included in the Ongoing Engagement Report which is described in the Order under **Condition 24**.

In conclusion, the Board is of the view that given the nature and scope of the Project, and with the implementation of Enbridge's commitments and fulfilment of regulatory requirements such as its EPP and EMP, as well as those mitigation measures committed to by Enbridge and discussed in these Reasons, particularly in Chapters 4 to 6, and the conditions imposed by the Board for the Project in the Order, any potential Project impacts on the rights and interests of Aboriginal groups are likely to be minimal and will be appropriately mitigated.

Chapter 8

Economic Feasibility

When evaluating an application for a physical project, the Board considers issues of supply, markets, alternatives, and financial matters in order to assess the economic feasibility of the Project. The Board's level of analysis of these issues is generally commensurate with the scope and impact of the applied-for project.

In this proceeding, Enbridge submitted evidence on these issues to demonstrate the economic feasibility of the Project. Several Participants supported Enbridge's evidence and provided additional evidence on the issues related to the economic feasibility of the Project. The Board also received evidence on these matters from Participants to rebut Enbridge and its supporters' evidence.

8.1 Supply

Views of Enbridge

Enbridge stated that the Project is expected to move a variety of crude oils sourced from western Canada and the U.S. Bakken region. Given the refinery configurations in the Quebec market, this supply would be comprised of a predominately light crude slate. Enbridge stated that it also expects some volumes of crudes normally categorized as medium or as heavy to be transported on an eastward flowing Line 9.

The Canadian Association of Petroleum Producers (CAPP) June 2012 Forecast, filed by Enbridge, estimated a substantial growth in western Canadian light crude oil supply of approximately 71 230 m^3/d (448,000 bpd) from 2012 to 2022. The CAPP forecast also estimated substantial growth in western Canadian heavy crude oil supply of approximately 292 000 m^3/d (1,800,000 bpd) from 2012 to 2022. Most of the growth in western Canadian heavy crude production is related to increasing supplies from the oil sands, with its associated volumes of condensate and other hydrocarbon diluents.

Enbridge also submitted the North Dakota Pipeline Authority (NDPA) forecasts as evidence that the light sweet crude production from the Bakken region of North Dakota will be sustained at over 159,000 m^3/d (1,000,000 bpd) from 2015 through 2025. The market for the light crude oil supply will be further impacted over the next two years by the completion of conversion projects to accommodate heavier crude slates at three Midwest U.S. refineries. These conversion projects will release a significant amount of light crude oil (68 360 m^3/d (430,000 bpd)) back into the market.

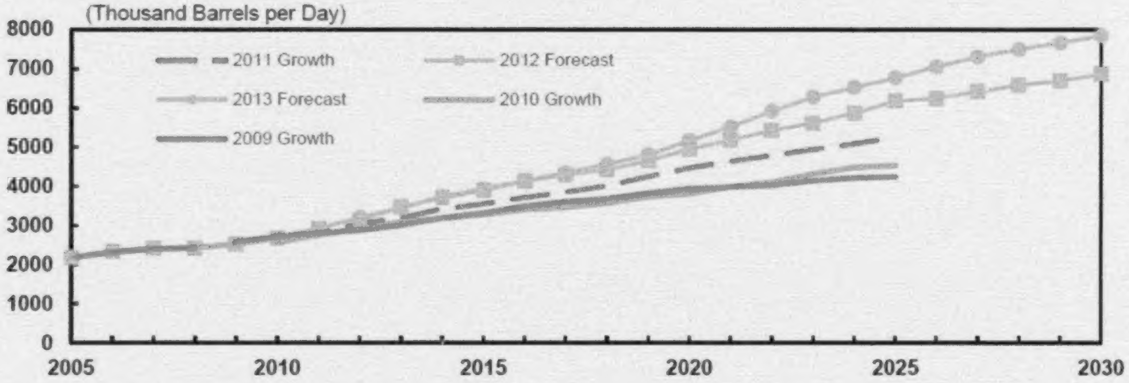
Enbridge submitted the Demke Report, which states that the Project contributes to the security of supply in Canada, since domestic crude oil will displace imported oil in the Quebec refining market, and since it is generally thought that the probability of supply disruptions is higher for foreign crudes than for domestic ones.

Views of Participants

Committed Shippers

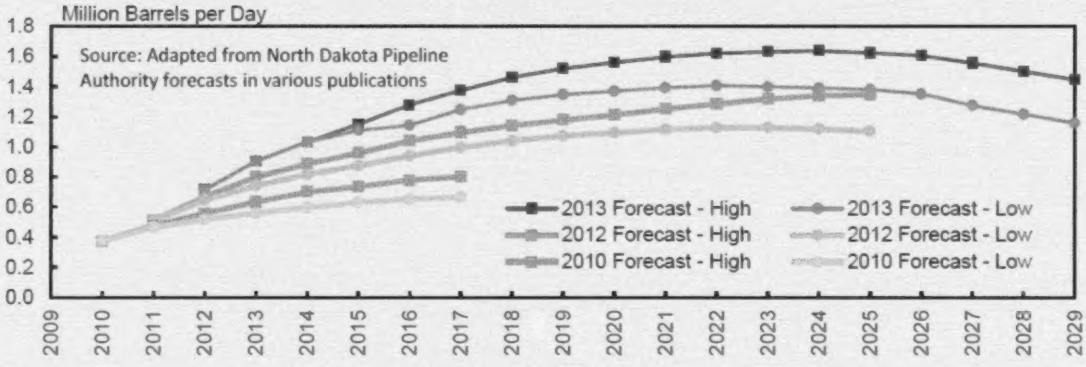
The IHS Global Canada Inc. Report (IHS Report), submitted by Suncor and Valero, cited the CAPP June 2013 Forecast, illustrated in Figure 8.1 below, comparing recent forecasts and growth (including the CAPP 2012 forecast referenced by Enbridge). According to the IHS Report, the series of CAPP forecasts illustrates a trend of growth in the outlook for Canadian oil production and supply, with the CAPP 2013 forecast of supply being substantially higher than the CAPP 2012 forecast, by the year 2030.

Figure 8-1 CAPP Western Canada Total Crude Supply Forecast Comparison (IHS Report)



The IHS Report also cited forecasts of Williston Basin crude oil provided by the NDPA, as shown below, with the 2013 forecast predicting production to be between 1.4 and 1.6 million bpd by 2020.

Figure 8-2 Williston Basin Crude Production Forecast Comparison (IHS Report)



Stratégies Énergétiques (SÉ)

SÉ submitted that the oil price forecast provided by Enbridge assumes that the price of light oil from the west remains substantially below world prices, over a period of 30 years. SÉ submitted that, in contrast, some major energy institutions and energy market analysts believe that oil prices will rebalance after North American crude oil transportation constraints are alleviated, but that this balance could be at a lower price.

In SÉ's view, these differing positions highlight the risk that western producers may fail to obtain prices sufficient to maintain production operations at a level needed to supply all markets, including supply related to the Project. SÉ also stated that western oil producers are being exposed to increasing environmental regulations on oil sands and shale oil that would increase production costs. In SÉ's view, if these producers were unable to obtain reasonable prices for their production, it would be logical to raise questions about the projected future oil production and even the survival of certain western oil producing projects.

Équiterre (Coalition)

Équiterre expressed skepticism that the increase in shale oil production is sustainable because there are, in its submission, very large uncertainties associated with shale oil development. Équiterre also commented that the decline in waterborne imports into North America is affecting North American crude pricing and, contrary to Enbridge's submissions, noted that there are increasing indications that this is putting downward pressure on global crude prices.

Enbridge Reply

In response to SÉ's argument that the expected growth in western oil production could not materialize if prices of light western oil prices remain substantially lower than world prices over the next 30 years, Enbridge submitted in reply that sufficient oil supply will occur as long as price exceeds supply costs, and that just because domestic oil prices are below international prices does not mean that production is uneconomic. Enbridge's reply evidence further submitted that SÉ's analysis is flawed because it focuses entirely on supply risk of western oil, while supply risk also applies to offshore imported crude oil. Enbridge submitted that it is the relative risks that are relevant and shippers would presumably make an assessment of supply risk before opting for service from a reversed Line 9B. Also, Enbridge's reply evidence stated that the long-term risks that could affect the ability of the western oil producers to supply the expected volumes of future oil production (geology, environmental constraints and cost, reduced demand, and low western oil price, as identified by SÉ) could be captured by looking at the results of sensitivity cases where time periods of shorter than 30 years were assumed, and with even these cases attributing substantial benefits to Line 9B reversal.

> ### *Views of the Board*
>
> The Board is of the view that the oil production forecasts filed as evidence (CAPP for Canada and NDPA for the U.S. Bakken) provide a reasonable prediction of the growth potential of these sources of oil and, on that basis, there will be supply for the Project. The forecasts are based on the prediction that the future netback price will be high

enough to underpin the growth expectations of oil producers in western Canada and in the U.S. Bakken region. The Board expects future supply of oil from western Canada and U.S. Bakken to be sufficient to cover traditional markets in Canada and the U.S. in addition to the demand from the Quebec refineries. The Board is also of the view that the Project enhances Canadian security of supply by providing Quebec refineries access to a stable and reliable crude oil source from western Canada and the U.S.

8.2 Markets

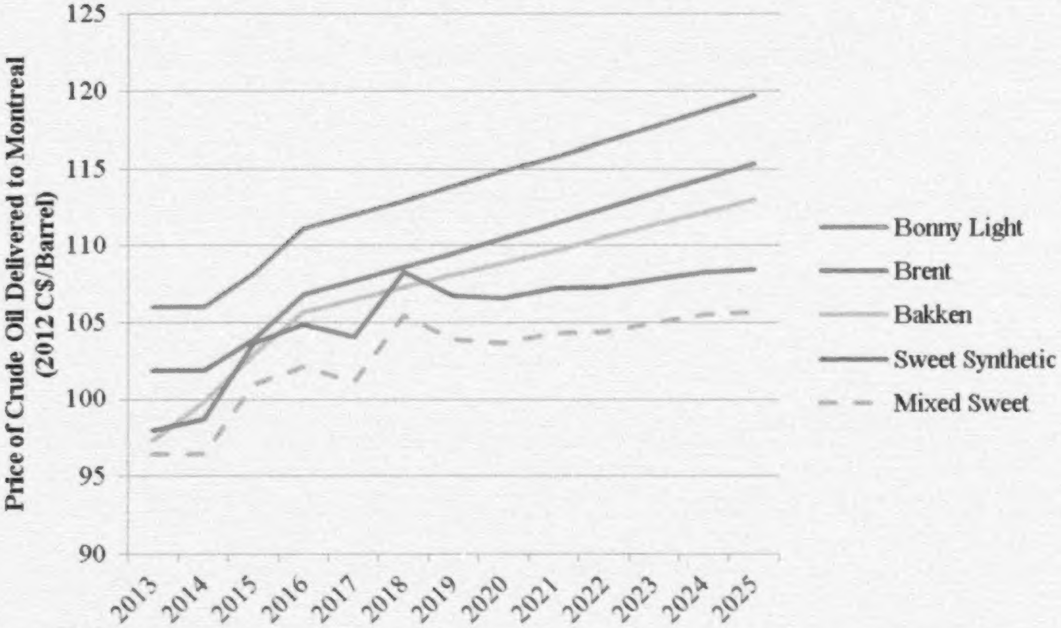
Views of Enbridge

Enbridge stated that the reversal of Line 9B would provide refineries in Quebec with access to the growing and less expensive supplies of crude oil from western Canada and the U.S Bakken region. The Project would also reduce the reliance of Quebec refiners on crude oil from areas of declining, or potentially unreliable supply.

The Demke Report submitted by Enbridge examined the potential savings in crude oil input costs by comparing Enbridge's forecasted prices of imported, tidewater crude oils (Brent, Nigerian), currently consumed at Quebec refineries, with western Canadian crude oils (Mixed Light Sweet (MSW); Sweet Synthetic) and U.S. Bakken oil that would be delivered by the Project (Figure 8-3). The prices were expressed in real terms (2012 Canadian dollars per bbl), and adjusted for transportation costs to the Montreal refinery gate. The forecast shows an increase in oil prices in the future, which according to Enbridge is a function of future tightening supply and demand for these crudes as well as transportation costs.

The differential in price, as determined at the Montreal refinery gate, between offshore (Brent) and domestic (MSW) (and hence, the expected crude oil cost savings for the Quebec refineries) was estimated to be $5.47/bbl in 2013, and then to vary between $2.97/bbl in 2015 and $8.88/bbl in 2024. Over the period 2025 to 2043, the forecast differential is flat at $9.72/bbl. The fluctuation in the oil price differential between 2013 and 2025 is related to the assumed startup of different pipelines such as Keystone, Northern Gateway and other pipelines in the U.S., as well as the changes in crude oil supply and the Canada/USA exchange rate. A similar projection of oil prices delivered to Quebec City was also included in the Demke Report, showing smaller but significant crude oil cost savings. The Demke Report also stated that western Canadian heavy crude oil may be available for the Quebec refineries at a cost saving relative to comparable heavy crudes from offshore suppliers (such as Mexican Maya).

Figure 8-3 Crude Oil Prices Delivered to Montreal (Demke Report)



The Demke Report included a sensitivity analysis of the main uncertainties including oil price differentials, transportation costs, refinery savings and others. The potential changes in price differentials were modeled by increasing and decreasing the projections of these differentials by 50%. The possible future changes in price differentials could result from a different outlook for international and domestic prices, and/or from a different outlook for transportation costs of the various oil types to the refinery gate. The results of the price sensitivity analysis indicate that the Project's economic impacts remain positive and robust.

Enbridge stated that it expects the opening of markets for western Canadian oil and the future volume of North American oil exports to not be significant relative to the size of the global crude oil market and therefore not affect either the Brent or Bonny Light benchmarks. Enbridge also indicated that none of the Line 9 shippers requested bidirectional flow capability for the pipeline.

Views of Participants

Committed Shippers

Suncor stated that it owns the last remaining refinery in Montreal and has entered into a 10-year Transportation Service Agreement (TSA) with Enbridge to ship crude oil on the reversed Line 9. Suncor stated that the Project provides it with the ability to economically replace largely foreign supplies of crude oil with western Canadian and Bakken-sourced crude oils for its Montreal refinery.

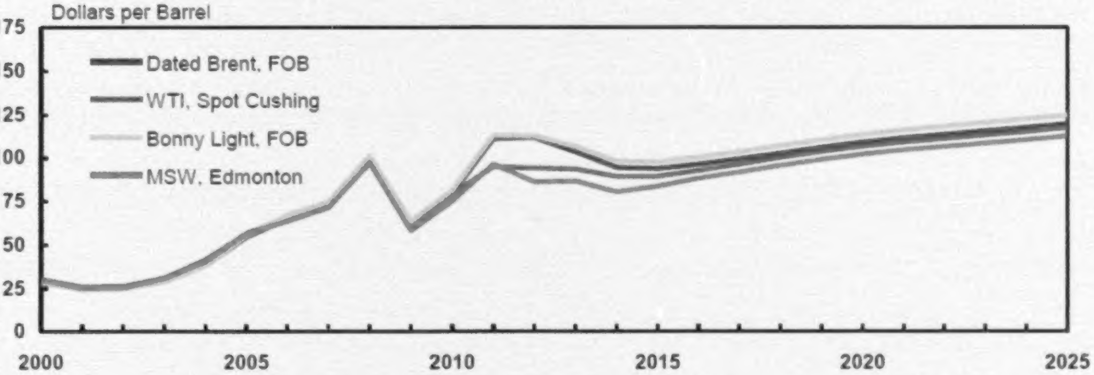
Suncor stated that the Quebec and Eastern Canada markets are the most competitive area for refining in Canada. Competition is fierce since it includes refineries in the U.S. Eastern seaboard, Gulf of Mexico and Europe. This fierce competition is evident from the rationalization of refinery capacity within Montreal, where Suncor's facility is the last of the six refineries in the city that still operates, as well as from the recently announced conversion of Imperial's Dartmouth refinery into an oil terminal. Suncor stated that refiners in the eastern Canada refined-product market must be allowed to safely and reliably access alternative crude supplies in order to remain viable and competitive with other refiners that have access to the same sources of supply or which may be expected to secure such supplies in the future. Suncor also stated that the continued viability of the Suncor refinery has a broad significance for the local petrochemical industry.

Valero (formerly Ultramar Ltd.) is a subsidiary of Valero Energy Corporation and owns the Jean Gaulin refinery at Lévis, near Quebec City, as well as several related facilities, including the Montreal East oil terminal. Valero submitted that the Project would allow its Lévis refinery to remain competitive when compared to the Atlantic Basin refineries that rely on higher priced imports. Valero stated that its Quebec refinery would have difficulty remaining competitive if the Project is not approved. Valero mentioned that it has witnessed the closure of other refineries due to competitive pressures, such as Shell's Montreal refinery.

Valero executed a 10-year TSA with Enbridge and has also committed to invest between $110 million and $200 million to overhaul the crude oil handling capacity at its Montreal East terminal and at its Lévis refinery to facilitate the movement of crude oil delivered by the Project from Montreal to Lévis.

The IHS Report stated that the two Quebec refineries at Montreal and Lévis are subject to intense competitive pressures from other refineries in eastern North America, specifically those located in Ontario, Atlantic Canada and the northern portion of the U.S. East Coast. All of these refineries have historically relied mainly on imported light sweet crude oil from the North Sea and Organization of Petroleum Exporting Countries (OPEC) members, as well as on eastern Canada crude.

Figure 8-4 Price Forecast for Brent and other crudes (IHS Report)

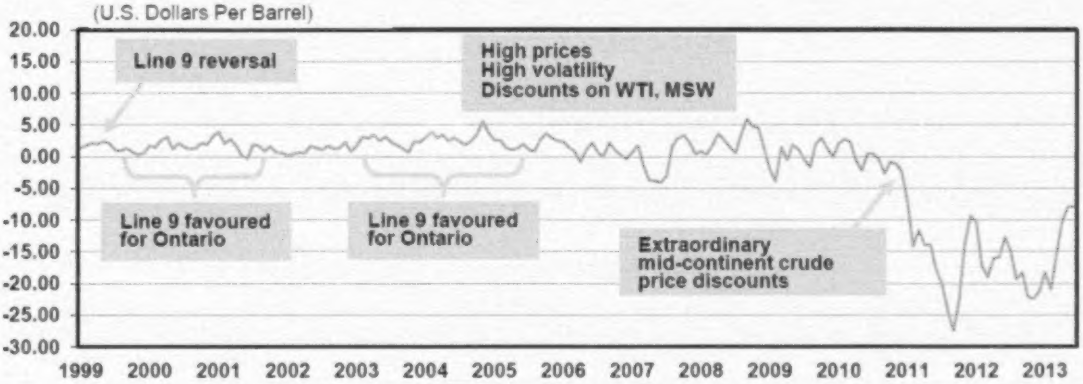


The IHS Report price forecast for Brent and other imported and domestic crudes is provided in Figure 8-4. The forecast reflects the IHS Report's outlook for growing future cost of incremental crude supply and takes into account the expected impact of future crude oil prices on supply and demand.

The IHS Report stated that the price differential between West Texas Intermediate (WTI) and Brent is indicative of regional supply and demand fundamentals between the U.S. Midcontinent (Cushing, OK) and the Atlantic trading hubs. The economics of crude oils delivered by Line 9 have evolved in a manner consistent with these fundamental trends. At the time of the reversal of Line 9 in 1999, there was a prevailing incentive to bring Atlantic basin crude (mainly North Sea light sweet crude such as Brent) into the Ontario refining market. This incentive was based on two factors: declining supplies of western Canadian conventional light crude; and, a surplus volume of North Sea crude that was serving North American refineries. This incentive is reflected in the positive differential WTI-Brent observed in the 1999-2005 period, as shown in Figure 8-5.

The economics of delivering imported crudes versus western Canadian crudes to the inland market regions of Canada have varied with the prevailing WTI-Brent trend. There have been periods when a comparative price advantage (expressed as a negative WTI-Brent differential) existed for delivering western Canadian crude into Ontario. From late 2005, there were periods when North American inland crude prices (including WTI and crudes priced against it) were discounted relative to Brent. Since late 2010, the growth of oil production from shale reservoirs, primarily in the U.S., has exacerbated the discount for inland crudes. This led to a period of apparent strong advantage for western Canadian crude processing in Ontario and Quebec, which was expressed as a wide WTI minus Brent differential.

Figure 8-5 WTI Cushing – Brent FOB (IHS Report)



The current demand for crude oil transportation capacity to markets outside western Canada exceeds the available takeaway capacity. The IHS Report states that although there are many factors that create this situation (such as delays on major pipeline projects and operational issues), the most important factor is the increase in crude oil supply from tight shale reservoirs. All these factors have contributed to the current situation of extraordinary price discounting for western Canadian light and heavy crude oil. The IHS Report states that it expects the price advantage of western Canadian and U.S. Bakken crude to moderate to a narrowed discount versus Brent and other similar tidewater crude oils within several years, as a number of pipeline projects (Enbridge's Flanagan South and Northern Gateway, TransCanada's Keystone XL and Energy East, and others) start up. Nevertheless, the IHS Report forecasted that the incentive (in terms of favorable domestic prices relative to imported supplies) for the Quebec refineries to access western Canadian crude through the Project would continue in the future.

Finally, IHS explained that the economics of refining are subject to various factors, including the value of the products manufactured at the facility, the cost of the crude oil and other feedstocks and the cost of operating and maintaining the refinery. All else being equal, reducing feedstock costs is likely the best opportunity to significantly improve refinery economic performance since these costs account for the majority of the refining operational costs, and therefore its future operation as a going concern. The reversal of Line 9 would ultimately improve the economic performance of the Quebec refineries by giving them access to additional sources of crude oil from Western Canada and Bakken, at an advantageous price versus the available market alternatives.

Stratégies Énergétiques

SÉ questioned the credibility of Enbridge's assumptions regarding oil prices over the next 30 years. SÉ stated that it is unreasonable to assume the unfavorable (negative) differential between western oil prices (i.e., western Canadian and U.S. Bakken) and world oil prices would prevail for 30 years or even a period as short as 2 to 4 years.

SÉ discussed several factors which, in its view, would lead to higher western oil prices and lower international prices. SÉ submitted that Western oil prices are lower than international prices due to the lack of enough pipeline capacity. Hence, Western oil producers are supporting several pipeline projects (Enbridge's Northern Gateway and South Flanagan, Trans Mountain Expansion Project, TransCanada Keystone XL) as a means to gain access to North American and international markets in order to reduce the price discount. SÉ asserted that North America is going to be a net oil exporter due to its growing oil production, increasing its oil price and, at the same time, lowering the price of other sources of oil in the world. SÉ also stated that there are some investigations into whether Brent prices have been maintained artificially high by anticompetitive practices for several years and that expected corrective measures would lower the price of Brent.

SÉ explained that these factors would lead to equilibrium of prices between Western oil, WTI and world oil prices (Brent, Bonny Light) at a similar level, which in SÉ's view is contrary to Enbridge's forecast that the western producers would fail in obtaining oil prices as high as the rest of the market (and that WTI will continue to be lower than Brent and Bonny) for the next 30 years. Additionally, SÉ criticized the oil transportation cost assumptions (pipeline and marine) used by Enbridge and in particular why marine transportation cost increases over the inflation rate, while pipeline cost remains stable in 2012 Canadian dollars from 2016 to 2043. Furthermore, SÉ stated that, given that world and Western oil prices would trend to equilibrium in the long term and the presence of price volatility, it would be possible that future world oil prices may sometimes in fact be lower or higher than western Canadian oil prices.

Nevertheless, in SÉ's view the higher risk affecting future global oil markets is the possibility of a future reduction of the world oil demand related to the adoption of measures at a global level to decrease carbon emissions that would lead to lower future world oil prices.

Given its observations about future Western and international oil prices, SÉ recommended that Line 9B should be continually reversible, in order to maximize the options available to refiners in Ontario and Quebec. SÉ also requested that the Board impose a condition requiring the reversed Line 9B to transport only light, sweet (low sulphur) crude oil.

Unifor (formerly Communications, Energy and Paperworkers Union)

Unifor stated in its evidence that it supported the Project because it would increase Canadian energy security and support value-added processing of Canadian oil resources, by providing a domestic outlet for Canadian crude oil, which in its view is preferable to exporting unprocessed Canadian natural resources. Unifor also indicated that eastern Canadian refineries pay substantially more for off-shore oil than would be the case if they had access to oil from western Canada. Unifor further stated that such economic and competitive pressures have led to refinery closures in the past, and that when that happens, consumers and workers suffer.

Équiterre (Coalition)

Équiterre submitted the Goodman Report which stated that the potential benefits of the Project for both the Quebec refiners (crude saving costs) and the crude producers (improved crude netbacks), are difficult to predict and are likely to be considerably less than assumed by the Demke Report and claimed in Enbridge's Application. The Goodman Report further stated that crude oil markets are rapidly evolving, highly dynamic and subject to substantial volatility. Thus, it cannot be easily predicted how pricing differentials between crudes will evolve over time and how much cost advantage there may be for inland crudes relative to offshore crudes.

Fédération des Chambres de Commerce du Québec (FCCQ)

FCCQ stated its support for the Project, saying that the reversal of Line 9B would allow refineries to access crude oils priced against WTI, rather than relying on Brent-priced crude which is more expensive. This change would improve the competitiveness of the refineries, which would help to preserve the petrochemical industry in Montreal East.

Ontario Petroleum Institute (OPI)

OPI stated that the fluctuation in the price of oil in recent times has resulted in the Ontario oil industry seeking competitive alternatives to obtain the best price possible. The reversal of Line 9B would offer Ontario producers enhanced competitive market alternatives for current and future production.

Alberta Federation of Labour (AFL)

AFL stated its support for the Project since it would lower the price of feedstock for the Quebec refineries, which in its view has significant public interest benefits. AFL stated that creating favorable economic conditions for value-added production should be a public interest goal. AFL also stated that higher price of feedstock can have wide-ranging consequences for the Canadian economy, including refinery closures and job losses.

Progressive Contractors Association of Canada

PCA supports the Project, since they believe it would increase market access for Canadian oil. PCA submitted that denial of the Project would limit market access for oil produced in Canada and stifle further growth of the Canadian oil and gas industry.

Manufacturiers et Exportateurs du Québec (MEQ)

MEQ stated that the Project would provide a significant cost advantage to the Quebec refineries, because Canadian (MSW) and U.S. Bakken oil have a competitive price advantage versus Brent; an even higher advantage is realized for Western Canadian Select versus Brent. MEQ explained that the diversification of the sources of crude oil will improve the stability and competitiveness of the Quebec refineries.

Enbridge Reply

In reply, Enbridge submitted the Demke Reply Report, which stated that the assumptions about the negligible effect of North American oil exports in world market prices and the non-inclusion of the proposed TransCanada Energy East Pipeline project and Trans Mountain Expansion Project, operated by Kinder Morgan Canada, in the price forecast of domestic (western Canadian and Bakken) and offshore crude oils is not a bias in its economic analysis, as was stated by SÉ. The Demke Reply Report stated that all assumptions and all main factors considered in the Demke Report analysis were clearly stated, and there was no bias in the numbers to make the Line 9B reversal appear more favourable, as suggested by SÉ. Regarding SÉ's comments about the effect of the completion of Keystone XL (2015) and Northern Gateway (2018) on western oil prices, the Demke Reply Report responded that SÉ did not perform a price forecast analysis considering scenarios with and without these two pipelines and factoring in all relevant factors, but rather only drew inferences from charts and tables it produced itself.

The Demke Reply Report also stated that SÉ's literature review on price forecasts was not particularly helpful, since it focused on price differences for different benchmark crudes without taking into account quality adjustments, transportation costs, oil production growth, and logistical infrastructure. The Demke Reply Report further noted that SÉ fails to acknowledge the significance of transportation costs. The Demke Reply Report stated that marine freight costs (tankers) are assumed to escalate with the increase in real marine fuel costs, which is consistent with the expected increase in real future oil prices, while pipeline transportation costs are assumed to remain constant because pipeline pumps run on electricity.

The Demke Reply Report further stated that even in the long run, North American prices would not "match" international oil prices, as is inferred by SÉ in its literature review, but rather there would be quality and transportation differentials between various oil markets that need to be accounted for. The Demke Reply Report added that oil prices would trend to equilibrium in a well-functioning competitive market reflecting transportation costs to a "watershed" market where oils of similar quality from different locations are just competitive with each other. This, in the case of North American oil supply, implies wider differentials than in the past, since western Canadian oil supply has to reach more distant markets.

What the Demke Reply Report identified as particularly relevant in the analysis of the Project is not the absolute level of prices, but the price differential between domestic crude (Canadian and Bakken) and imported crude. The Demke Reply Report suggests that SÉ confuses the general levels of oil prices and the size of oil differentials.

The Demke Reply Report noted that the analysis in the Goodman Report regarding the reduction of expected refinery cost savings due to the effects of price uncertainty, which concluded that the oil price savings are likely overstated, did not consider the fact that this uncertainty could also increase the expected refinery cost savings over the reference case, and there is no argument presented in the Goodman Report that the analysis included in the Demke Report used price differentials on the high side of the uncertainty range. The Demke Reply Report provided a set of sensitivity cases to assess the effect of alternative assumptions on its analysis of refinery cost savings, including oil price changes and other non-identified pipeline projects, which could soften future price differentials; in all cases refinery savings were identified. The Demke Reply Report also stated that prospective shippers on a reversed Line 9B also apparently expect cost savings as evidenced by their willingness to enter into ten year TSAs with Enbridge.

Views of the Board

The Board analyzed the oil price forecast submitted by Enbridge in support of the Application, as well as the oil price forecast in the IHS Report. The Board notes that the future evolution of the price differential between Brent and WTI is important for the economic justification of the Project, since prices of U.S. Bakken and western Canadian crude oils are linked to WTI. The Board also considered the comments from Équiterre and SÉ about the credibility of these forecasts, as well as the possibility of a future evolution of oil prices that could diverge from the one proposed by Enbridge and in the IHS Report. The Board is aware of the complex nature of the world oil market and the existence of price volatility and uncertainty (related to geological, geopolitical, environmental and economic factors), making oil price forecasting a difficult task. Nevertheless, after taking into account the premises and factors related to the two future price scenarios submitted by Enbridge and by the committed shippers (Valero and Suncor), the Board is of the view that the market and transportation cost assumptions supporting the future oil price scenarios for the Quebec refineries portrayed by Enbridge, and in the IHS Report, are reasonable.

Although the expectation of favourable market conditions is one of the supporting factors for a pipeline project, the presence of firm commitments from shippers supporting the project during its expected lifetime is of considerably greater importance. The Board noted that under ship-or-pay contracts, like the ones signed by Enbridge's shippers on the proposed reversed Line 9B, the market risk of the Project (expressed by the possibility that future price movements would make it uneconomic to bring western Canadian crude to Quebec's refineries) is borne by the shippers, not by the pipeline company. Hence, the presence of these contracts signed by sophisticated commercial parties gives a high degree of confidence that the reversed pipeline would be used and useful at a reasonable level during its expected lifetime.

The Board also takes into account the statements of Valero, Suncor, MEQ, AFL, Unifor, FCCQ and others that the Project would help the Quebec refineries to improve their competitiveness as well as enhance their long term survival in a very competitive market. The Board is of the view that the Project would likely improve the competitive position and long term survival of the Montreal and Lévis refineries, as well as their associated industries.

The Board notes that no shipper requested bidirectional service on the reversed Line 9B. Also, the Board notes that the arguments in favour of limiting the types of crude oil that would be transported on the pipeline are counter to the free markets principle of allowing parties to freely choose what commodities best suit their needs. Hence, barring other considerations, such as pipeline safety (discussed in Chapter 4), the Board does not support imposing conditions about the type of commodities transported or the kind of service requested from the Project outside of what was freely agreed to between Enbridge and its shippers.

8.3 Alternatives

Views of Enbridge

Enbridge stated that the Project is the most economical and efficient way to meet its customers' market demand since the Project is the reversal of an existing Enbridge asset on an existing RoW. Enbridge noted that to date Line 9B is underused because throughput on Line 9 over the last three years (2009-2011) has averaged 64,000 bpd. Enbridge explained that unless Line 9B is reversed, it would be idled when Line 9A is reversed.

Enbridge stated that, since the alternative is that Line 9B would be idled if the Project is not approved, no other alternatives to the Project were investigated. In response to an IR from the Board, Enbridge provided an assessment of the feasibility of using rail, barge, waterborne tanker, other existing pipelines or trucks, in isolation or in combination, to deliver western Canadian and/or U.S. produced crude oil to Quebec area refineries. In all cases, Enbridge concluded that these options were potentially feasible to varying degrees, but that none were practical in terms of economics and efficiency. Enbridge further stated that it is not feasible for other pipelines to service the Quebec refineries before the Project's expected in-service date in Q4 2014.

Views of Participants

Committed Shippers

Valero stated that shipping via Enbridge Line 9 offers it a commercial advantage over other forms of transportation. Suncor stated that the Project would put to use what otherwise may be an idled asset.

The IHS Report submitted by Valero and Suncor provided an assessment of the outlook for crude supply to the Quebec refineries if the Project does not proceed. The IHS Report emphasized that the economic viability of alternatives depends on the source of crude, the price of the crude at its origination point, transportation assumptions, costs for delivery to the refinery location, the specific constraints applicable to the processing of the crude in question, and potentially other relevant factors, such as any equity (ownership) relationships.

The IHS Report stated that the Quebec refineries each have unique capabilities to handle crude supplies delivered by pipeline, rail and/or waterborne tanker. The options for crude supply would include domestic crude supply by pipeline, domestic crude supply by rail, imported crude supply by pipeline, imported crude supply by rail, and imported crude supply by waterborne tanker. Currently, the majority of crude supply is supplied either by pipeline from imported sources (for Suncor (Montreal)) or by waterborne tanker (for Valero (Lévis)).

The IHS Report estimated the costs of alternative delivery of crude oil from western Canada or the U.S. northern tier to the Quebec refineries would be in the range $13-16 per bbl. The IHS Report stated that this range of costs is significantly higher than the estimated costs of delivery on Line 9 following completion of the Project. This reduces the economic feasibility of alternative options since one of the objectives of the Project for the Quebec refineries is to realize an economic advantage through an increase in the refinery margin, to the extent these feedstocks are favourably priced versus the available market alternatives.

Équiterre (Coalition)

Équiterre explained that the economic benefits and costs are measured relative to a reference case that has essentially zero economic benefits and costs. Équiterre sponsored the Goodman Report which stated that the public interest would be served if Line 9B is left idle, due to the proximity of the Project to people, water, and economic activity, in particular the Project's routing though Canada's two biggest urban centres (Toronto and Montreal), and due to the minimal cost associated with idling the pipeline.

Enbridge Reply

In its reply evidence, Enbridge provided the Demke Reply Report which stated that Équiterre's conclusion that there are zero economic benefits and costs associated with idling Line 9B misinterprets the information from the Demke Report. Rather, there would be a large cost of idling Line 9B primarily attributable to the high cost of crude oil imports.

> #### *Views of the Board*
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> In the OH-005-2011 Letter Decision (Line 9 Reversal Phase I Project), the Board stated that making use of existing underused pipeline capacity, such as the capacity on Line 9, is a sound idea. The Board is of the view that this conclusion is also appropriate for this Project. While some Participants suggested that reasonable supply alternatives currently exist for the Quebec refineries, these alternatives would not achieve the same magnitude

of economic benefit as expected from this Project. The Board concludes that the Project represents the most economically feasible alternative.

8.4 Financing

Views of Enbridge

The Project's capital cost is approximately $170 million.[14] Enbridge stated that the Project would be financed using internally-generated funds. Enbridge stated that the capital costs, a small amount of which have been incurred to date in order to maintain the integrity of Line 9B, are included in the initial tolls set and would be recovered through committed and uncommitted tolls.

Views of the Board

The Board notes that no Participant commented on the proposed method of financing the Project, and the Board has no concerns about the ability of Enbridge to finance the Project.

8.5 Economic Feasibility and Justification

The economic feasibility discussion integrates information provided elsewhere in the Application, such as supply and markets, in order to evaluate whether the Project is economically feasible. Evidence presented on the justification of a project includes a discussion of the needs that would be satisfied by the project and a discussion of whether, taking into consideration all viable alternatives available, the proposed project is the most appropriate option to meet the needs while serving the public interest. The Board considers the economic feasibility and justification of a project in determining whether a project is expected to be used and useful throughout its economic life.

Views of Enbridge

Enbridge initiated the Project in response to requests from eastern Canadian refineries. Enbridge held a formal binding open season for a 10-year ship-or-pay TSA on the reversed Line 9 with one five-year renewal option. Enbridge executed three TSAs representing an aggregate committed volume of 275,000 bpd. The annual capacity of Line 9 would be 300,000 bpd, with 25,000 bpd of capacity reserved for spot, or uncommitted, volumes.

The Demke Report, submitted by Enbridge, measured the Project's economic effects relative to a reference case without the Project but including the operation of the Line 9 Phase I Reversal Project. The Demke Report simulated the impact of the Project's economic effects on the national and provincial economies using the Statistics Canada Interprovincial Input-Output Model (I-O Model), and on government revenues using a fiscal model. The I-O Model differentiates the expenditures related to pipeline construction[15] and on-going pipeline operations, and distinguishes among direct, indirect and induced impacts.

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[14] The initial capital cost was $129 million. The increase in the capital cost was a result of changes to the Project scope discussed in Enbridge's Application Update filed 10 September 2013.

The Demke Report found that the most significant effect identified was the direct economic effect arising from the input cost savings to the Quebec refining market of $23.512 billion (average annual amount of $783.7 million) over 30 years. The Demke Report added this saving in feedstock costs to Quebec's GDP as a direct economic effect of the Project. In its Application, Enbridge described these refinery benefits as additional to the main benefit of the Project being to provide western Canadian and U.S. Bakken producers access to the Quebec refining market while reducing the reliance of Quebec refiners on crude oil from areas of declining, or potentially unreliable, supply.

When the economic impact of the Project is isolated to the 10-year term for which the Project has committed volumes, the input cost saving to Quebec refineries is estimated to equal $5.539 billion 2012 dollars (or average annual amount of $553.9 million). Beyond 2025, the analysis assumes that crude oil prices remain constant in real terms. The average estimated benefits are higher when a 30-year timeframe is considered due to the larger differential between the imported oil price and the domestic oil price projections over the long term, including adjustments made for transportation costs. Enbridge noted that even for terms shorter than the 30 year economic life of the Project, including the 10-year term for which the Project has committed volumes, the economic effects of the Project are predicted to be substantially positive.

Besides the direct GDP impact arising from refiner savings, the Demke Report also stated that the Project would inject $1.6 billion directly into the economy by means of construction spending and pipeline transportation revenues over 30 years (60% will occur in Ontario and 40% in Quebec).

In terms of the broader direct and indirect economic impact of the Project over 30 years, the Demke Report stated that economic benefits would include labour income increases of nearly $350 million, employment increases of approximately 5,500 person years, and government revenue increases of $6,643 million. These effects are observed mostly in the provinces of Ontario and Quebec.

Views of Participants

Committed Shippers

Two of the three committed shippers,[16] Valero and Suncor, each submitted evidence on the economic need for the Project. Both Valero and Suncor support the Project given the competiveness of the refining industry and the impact of the Project on their supply and markets (See Sections 8.1 and 8.2 for further discussion).

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[15] The Demke Report used an initial capital cost of the Project of $121.8 million, an amount lower than the capital cost used by Enbridge in its original submission. Enbridge subsequently advised the Board of the increased estimated capital cost of the Project of $170 million in its Application Update, and the Demke Reply Report stated that the revised capital cost does not have an appreciable effect on the overall results and conclusions of the economic impact assessment.

[16] Imperial Oil uses Line 9 to supply crude oil to its Nanticoke refinery in Ontario and is a committed shipper on Line 9 but did not submit evidence in this proceeding.

Équiterre (Coalition)

Équiterre submitted the Goodman Report which discussed the relative economic costs and benefits of the Project. The Goodman Report determined that there are economic benefits associated with the Project, including benefits to crude producers and Quebec refiners. However, it observed that these benefits are not as significant as estimated by Enbridge, especially in the near term. The Goodman Report also stated that the Demke Report does not incorporate the cost of any refinery capital investments should they be necessary in relation to the Project.

The Goodman Report suggested that the Quebec refineries can remain viable without the Project and that the indirect economic impacts resulting from the Project would still be present even if the Project is not approved. Furthermore, when viewed in the relevant context of the Quebec, Ontario, and Canadian economies, the Goodman Report stated the Project would have minimal impact on employment and GDP, and that this impact could be insignificant when weighed against the cost of a major accident or spill.

Association industrielle de l'est de Montréal (AIEM)

AIEM stated that it was in favour of the Project. AIEM represents 13 members who operate industrial businesses in Montreal East. AIEM suggested that sustainable development has three fundamental components: environment, economic and social considerations. AIEM explained that when a project adheres to the values of its members on these three components, the organization publicly supports that project, as is the case for this Project. AIEM detailed the efforts made by its members over the years to improve the social and environmental health of Montreal East, and discussed how its members achieve synergies to reduce energy consumption and optimize resource utilization.

Fédération des chambres de commerce du Québec

FCCQ supported Enbridge's evidence on the broader economic impact of the Project. FCCQ explained the importance of the chemical, petrochemical and refinery sector in Montreal's economy, both in terms of direct and indirect impact, although FCCQ acknowledged a decline in the sector in recent years. FCCQ submitted that projects of this nature cannot be carried out as in the past because citizens are more aware and informed today and this makes public acceptance of projects important. FCCQ differentiated between a project being publicly acceptable and unanimously accepted and provided evidence of public opinion research conducted in 2012 and 2013 demonstrating that the Project enjoys public support.

Ontario Petroleum Institute

OPI represents companies and individuals involved in oil and natural gas production, hydrocarbon storage, and salt/solution mining in Ontario. OPI stated that the Project offers producers an enhanced competitive market alternative for current and future production, since currently all of the Province's crude oil production is used by Ontario's refineries. OPI also emphasized that the Project would benefit Canadian economic growth by opening up opportunities for market access to Ontario's natural resources.

Alberta Federation of Labour

AFL expressed support for the Project, provided that the Project meets environmental standards, is built following appropriate community consultation, and creates jobs and value-added economic activity for Canadians. AFL stated that the Project is in the public interest because it contributes to a more thoughtful industrial policy for Canada, mitigates regional economic disparities, and mitigates the economy-wide negative effects of bitumen export pipelines.

Le Conseil du patronat du Québec (CPQ)

CPQ provided evidence on the importance of the Project to Quebec's economy. CPQ stated that the Suncor refinery is at the heart of the petrochemical industry in Quebec, and suggested the Project would have a great impact on the petrochemical industry in Montreal East. CPQ noted that the industry has been through difficult economic times in the past, and would suffer a fatal blow if the Suncor refinery was to close. CPQ noted that the Project would result in additional investments that have not been included by the Demke Report, and further noted that the Project would also result in a reduction in Canada's trade imbalance due to a reduced reliance on imports.

Progressive Contractors Association of Canada

PCA provided evidence on the potential commercial impacts of the proposed Project. PCA noted that the Project would expand work opportunities for PCA member companies and their employees, and that there is a direct commercial and economic benefit associated with the development of Canada's energy sector and expansion of pipeline capacity.

Manufacturiers et Exportateurs du Québec

MEQ stated that it supports the Project. MEQ stated that the Project would benefit the Quebec refining industry, the petrochemical industry as well as the manufacturing sector. MEQ explained that the productivity and competitiveness of Quebec's industries depend in large part on access to sources of energy that are diversified and reliable.

Enbridge Reply

Enbridge submitted the Demke Reply Report to counter the Goodman Report (submitted by Équiterre (Coalition)). The Demke Reply Report noted that the analysis conducted in the Goodman Report did not include a social benefit cost analysis and rather accepted the Demke Report's gross impact approach, but observed that the Goodman Report did not include the induced economic effects calculated in the Demke Report. Furthermore, the Demke Reply Report observed that the Goodman Report only treated the refiner cost savings as being potentially overstated by the Demke Report, but noted that it is possible for the cost savings to be understated.

Views of the Board

The Board notes the responsibility of pipeline companies to ensure that pipelines are used and useful and economically feasible throughout their economic life. While it is up to pipeline companies to manage their systems, if there is a fundamental change in the underlying economics of a pipeline, a company can apply to the Board to repurpose its assets if this becomes necessary.

The history of Line 9 illustrates that supply and markets are dynamic and can change substantially over time, such that pipeline facilities can become underutilized. The Board notes that while forecasts are inherently uncertain, the economic benefits in the near-term associated with the Project are expected to be significant, especially relative to the small capital cost of the Project. The Board considers the existence of long-term TSAs to be strong evidence of the need for the Project, and is not persuaded by the arguments of some Participants that these contracts are insufficient evidence that the forecasted economic benefits associated with the Project would be realized.

The Board concludes that the Project is economically feasible, has been justified, and that the facilities are expected to be used and useful for the economic life of the Project. The Board's determination of sufficient supply and markets for this Project, as described in Sections 8.1 and 8.2 of these Reasons, as well as the committed volumes of commercial parties demonstrating that tolls are likely to be paid, have guided the Board's determination on this matter.

Chapter 9

Toll Principles and Methodology

The List of Issues included the appropriateness of the proposed Rules and Regulation Tariff and tolling methodology pursuant to Part IV of the NEB Act. In assessing a proposed methodology, the Board considers whether the resulting tolls would be just and reasonable, and whether the toll methodology would not result in any unjust discrimination in tolls, service or facilities. Specifically for an oil pipeline, the Board must also be satisfied that the pipeline would receive, transport and deliver all oil offered to it for transmission in accordance with a pipeline's common carrier obligations under section 71 of the NEB Act.

9.1 Open Season

Views of Enbridge

Enbridge held a formal binding open season from 17 May until 15 June 2012 for shippers interested in committing to a long-term ship-or-pay TSA. The open season defined a 10-year term with one five-year renewal option. Enbridge submitted that leading up to and during the course of the open season, a number of companies signed confidentiality agreements to review the Project details. Upon the close of the open season, Enbridge received executed TSAs from three counterparties with refining interests in Eastern Canada, for a total volume commitment in excess of the firm capacity offered in the open season. Due to the increased committed demand for the Project, Enbridge adjusted its capacity offering to accommodate 275,000 bpd of the requested commitments. Enbridge stated that a minimum of 25,000 bpd of capacity has been reserved for spot, or uncommitted, volumes.

> *Views of the Board*
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> Given that no Participant raised concerns about the openness and transparency of the open season, the Board has no concerns with the open season.

9.2 The Applied-for Toll Methodology

Enbridge applied for approval under Part IV of the NEB Act for its proposed revised Line 9 Rules and Regulation Tariff, which includes specifications for allowable crude types. The current Rules and Regulation tariff in place on Line 9 (NEB Tariff No. 297, effective 1 August 2011) allows light and medium crude. The revised Tariff would allow Enbridge to charge a toll for transporting light, medium and heavy crude.

In the List of Issues to be considered in this proceeding, the Board stated that its consideration of the appropriateness of the tolling methodology for Line 9 would be limited to consideration of the duties of a pipeline pursuant to section 71 of the NEB Act, which describes the common carrier obligations of an oil pipeline. This consideration includes the appropriateness of the toll premium allocated to uncommitted shippers.

The NEB's Filing Manual states that when the Board considers an application for facilities under Part III of the NEB Act, the toll impacts of proposed facilities are relevant.

Views of Enbridge

Current and proposed tolling methodology

The current Line 9 tolling methodology is defined by the *2011 and Beyond* Agreement that was made between Enbridge and Imperial Oil and subsequently approved by the Board's Letter and Order TO-004-2011 dated 15 September 2011.

The Enbridge Mainline system is currently operating under a negotiated Competitive Toll Settlement (CTS) effective 1 July 2011, which terminates 30 June 2021. The CTS, with some exceptions, fixes tolls on the Mainline until 2021. The CTS establishes an International Joint Tariff (IJT) for all volumes shipped from western Canadian receipt points to delivery points on Enbridge's Lakehead Pipeline System, and delivery points on its Canadian Mainline located downstream of the Lakehead System, including Nanticoke and West Seneca, which are serviced by the Canadian Mainline as well as by Line 9. The IJT tolls are also fixed until 2021, but can be adjusted. Currently, Line 9 tolls are stand-alone from the Mainline system.

Enbridge stated that the proposed tolling methodology for the Project was the result of commercial negotiations and is aligned with the principles and the toll making methodology underlying the CTS. Enbridge further stated that the CTS IJT tolls applicable to delivery points on the Enbridge Mainline will be the same, irrespective of the specific facilities or path used. Committed and uncommitted tolls to Nanticoke and West Seneca are proposed to be the same on Line 9 as those published under the current CTS IJT.

Toll levels

All IJT tolls, including the Line 9 IJT, adjust for distance and for commodity types (that is, the longer the distance and the heavier the crude type, the higher the toll). Relative to the light crude toll, the commodity adjusted toll is approximately 8% higher for the transportation of medium crude and 21% for heavy crude.

Enbridge stated that it negotiated with prospective shippers on the Line 9 IJT toll from SA to ML. The negotiated toll was then added to the CTS IJT toll to SA to derive the Line 9 IJT toll. Compared to a distance adjusted toll using the CTS IJT, the resulting Line 9 IJT toll to ML was $0.21/bbl higher. This $0.21/bbl premium is applied to committed and uncommitted tolls.

Adjustments to the toll

Enbridge stated that the toll is adjusted annually on 1 July at a rate of 75% of the GDPP (the annual average Canada Gross Domestic Product at Market Prices Index, published by Statistics Canada on or about February 28th).

The uncommitted tolls could be adjusted for reasons other than the annual GDPP Index adjustment or any incremental tolls resulting from an NEB order in relation to the Board's Land Matters Consultation Initiative (LMCI).[17] For example, adjustments to the CTS IJT or an expansion could result in adjustments to the uncommitted tolls. In such a case, Enbridge would consult with shippers before making a filing with the NEB.

Enbridge explained that the premium for service from western Canada to Montreal paid by uncommitted volume shippers may increase or decrease over the time period of the TSA but will never exceed a 22% premium to the committed tolls. The 22% maximum premium over committed tolls would apply for the duration of the Line 9 TSA. Enbridge stated that if a permitted adjustment to committed tolls would result in uncommitted tolls exceeding the 22% premium, then Enbridge would file with the NEB adjusted Line 9 uncommitted tolls (applicable to service from SA to ML) such that the total uncommitted toll from any Canadian Origination Point to Montreal is no more than 22% over the committed toll from the same Canadian Origination Point to Montreal.

A decrease in the uncommitted toll premium could occur, for example, if the committed toll and uncommitted toll both increased by the same dollar amount. An LMCI surcharge would be an example of this.

Views of Participants

Although some Participants raised concerns about allowing Enbridge to transport heavy crude as a result of its application to revise the Rules and Regulations Tariff,[18] no Participant commented on the Part IV matters related to the Rules and Regulations Tariff.

Views of the Board

The Board is of the view that the proposed tolling methodology on Line 9 is reasonable. Since delivery points that can be served by Line 9 (Nanticoke and West Seneca) can also be served by the Mainline, which are established in the IJT, it is appropriate for these tolls to align in order to prevent unjust discrimination. Therefore, the Board considers it appropriate to align the tolling methodology for the reversed Line 9 with the current IJT.

In general, the Board relies on commercial parties to represent their interests to the Board and express support for, or opposition to, financial matters including tolls and tariffs. For this Project, the commercial parties (committed shippers) that executed 10-year ship-or-pay TSAs were Intervenors in the proceeding. The shippers supported the Project and two of the three TSA signatories (Suncor and Valero) presented evidence on the economic benefits associated with the Project. No Participant expressed concerns about the open season or the toll level, tolling methodology or uncommitted toll premium.

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[17] LMCI means the NEB Land Matters Consultation Initiative (RH-2-2008) and the decisions, directions and orders issued in that proceeding.

[18] For example, Stratégies Énergétiques recommended that the Board not approve Enbridge's request to amend the tariff to transport heavy crude. The Board addresses this request in the Markets Section (Section 8.2).

The Board gives weight to the absence of concern expressed by any commercial party about the uncommitted toll premium or the proposed tolling methodology since these are sophisticated parties that would express concerns to the Board if necessary. The Board notes that the CTS was the result of negotiations between Enbridge, various Enbridge Mainline shippers and CAPP. CAPP is an Intervenor in this proceeding and has not expressed concern with respect to the tolling methodology and its alignment with the CTS. The Board determined that the CTS is consistent with the *Revised Guidelines for Negotiated Settlements of Traffic, Tolls and Tariffs*, and considers the tolls calculated in accordance with the CTS to be just and reasonable.

Since Enbridge has not asked for approval of tolls at this time, the Board has not considered the toll level Enbridge will charge when the Project is in service. Enbridge is required to file the Line 9 toll with the Board prior to the facilities being placed into service and, at that time, the Board will determine if the tolls are just and reasonable and not unjustly discriminatory. The Board's decision in this proceeding on the tolling methodology does not predetermine Board approval of the Line 9 toll.

9.3 Capacity Allocation and Throughput

Subsection 71(1) of the NEB Act sets out the concept that oil pipelines under the Board's jurisdiction are common carriage pipelines, and states as follows:

> *"Subject to such exemptions, conditions or regulations as the Board may prescribe, a company operating a pipeline for the transmission of oil shall, according to its powers, without delay and with due care and diligence, receive, transport and deliver all oil offered for transmission by means of its pipeline."*

Oil pipelines are increasingly relying on long-term contracts to support the construction of new facilities. In such a scenario, capacity needs to be allocated in an appropriate manner among Firm Shippers and Uncommitted Shippers to ensure that the pipeline continues to comply with its common carrier obligations. The Board has indicated in the past that the determination of an appropriate level of capacity to be set aside for uncommitted volumes is a matter of judgment and should be based on the circumstances of any specific case.[19]

Views of Enbridge

Enbridge submitted that 25,000 bpd of uncommitted capacity on Line 9 is sufficient for Enbridge to meet its common carrier requirements under the NEB Act. The uncommitted capacity represents 8.3% of the annual capacity of Line 9 of 300,000 bpd. Enbridge stated that the volume of uncommitted capacity is responsive to the requirements of the eastern Canadian refinery market.

Enbridge defined the priority of service between committed and uncommitted volumes in the proposed Rules and Regulations Tariff. In a response to an IR from the Board, Enbridge summarized how the available monthly capacity priority will be allocated among committed and uncommitted shippers in the Rules and Regulations Tariff (Rule 14(d)). The tariff results in uncommitted volumes being ranked fifth in order of priority.

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[19] Reasons for Decision, RH-1-2012, Trans Mountain Pipeline ULC at page 29 (PDF page 41 of 54).

Priority Order:[20]

1. Committed Volumes, excluding Make-up Volumes, to the level of Aggregate Committed Volumes.
2. Committed Shippers' Make-up Volumes to the extent there is Unused Committed Capacity.
3. Carrier Force Majeure Initial Volumes to the extent there is Unused Committed Capacity.
4. Carrier Force Majeure Extended Volumes to the extent there is Unused Committed Capacity.
5. Uncommitted Volumes.
6. Make-up Volumes in excess of Unused Committed Capacity.
7. Carrier Force Majeure Initial Volumes in excess of Unused Committed Capacity.
8. Carrier Force Majeure Extended Volumes in excess of Unused Committed Capacity.

Additionally, if Uncommitted Volume nominations are greater than the Uncommitted Capacity and Unused Committed Capacity, Uncommitted Volumes would be apportioned on a pro-rata basis.

Although Enbridge has 25,000 bpd of pipeline capacity set aside for uncommitted volumes, Enbridge confirmed that the full 25,000 bpd may not be available for uncommitted shippers in all circumstances, and in some cases the available capacity for uncommitted shippers could be zero. For example, in a situation where there was a reduction in operating pressure for a period of time and the pipeline was operating at an annual average capacity below the aggregate committed volumes, the amount of space allocated to uncommitted shippers would be zero (assuming that committed shippers used all the pipeline capacity that was available to them).

Views of the Board

The Board is of the view that the proposed allocation of capacity between firm service and uncommitted service is acceptable. The uncommitted toll premium reflects the different level of financial commitments and the risk undertaken with respect to the Project, and it is reasonable to expect that uncommitted shippers have access to uncommitted capacity that aligns with their level of commitment to the pipeline. Considering that the uncommitted capacity is expected to be sufficient to enable receipt of shipments from connecting pipelines when the Project is in service and that no Participant disputed the fairness of the Open Season or the resulting capacity allocation, the Board is of the view that Enbridge's proposal is consistent with its common carrier obligations.

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[20] Make-up volumes are defined as volumes shipped by a Committed Shipper in excess of Committed Volume, for which a Monthly Deficiency Payment has been paid. A Monthly Deficiency Payment is paid when the actual shipments in a given month are less than 100 % of the committed volume.

Although there is no prescribed level, the Board notes that the 8.3% allocated to uncommitted volumes is generally lower than what has been required by other oil pipelines to meet their common carrier requirements. Additionally, Enbridge stated that operational circumstances may result in less than 8.3% of volume reserved for uncommitted shippers, and may be zero in certain circumstances. However, the determination of the appropriateness of this level of uncommitted capacity is largely a function of commercial Participants expressing their comments. The Board considers it significant that no Participant commented on this proposed allocation. As a result, the Board has concluded that the applied-for revision to the Line 9 Rules and Regulations Tariff is reasonable.

9.4 Exemptions

Pipeline companies regulated by the Board are divided into two groups for financial regulation purposes. Group 1 companies are generally identified as those that operate extensive pipeline systems, whereas those with smaller pipeline operations are designated as Group 2. Enbridge is designated as a Group 1 company.

Group 1 companies must comply with the *Toll Information Regulations,* which require the filing of quarterly surveillance reports on financial performance and throughput, and with applicable accounting regulations. The Board may grant exemptions from regulatory requirements under subsection 129(1.1) of the NEB Act.

As part of the Line 9 Settlement Agreements Application, Enbridge applied for and received an exemption from the requirement to keep the system of accounts as prescribed by the *Oil Pipeline Uniform Accounting Regulations* (OPUAR) and from the requirement to comply with the reporting and filing requirements set forth in the Board's Filing Manual, Guide BB entitled Financial Surveillance Reports. In place of these requirements the Board directed Enbridge to file audited consolidated financial statements on an annual basis.[21] In granting the exemption, the Board noted the Line 9 Settlement's short time frame.

Views of Enbridge

Enbridge requested an exemption from:

1. the requirement to keep the system of accounts prescribed by the OPUAR;[22] and
2. the filing requirements specified in Guide BB of the Filing Manual.

With respect to the OPUAR, Enbridge proposed to continue to maintain its existing chart of accounts for Line 9. Enbridge stated that it complies with paragraphs 5(1)(a) and 5(1)(b) of the OPUAR vis-à-vis Line 9 and otherwise. Enbridge does not keep its general ledger according to the prescribed system of accounts. Rather, its general ledger is kept according to its own chart of accounts, and this is mapped to the prescribed system of accounts.

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[21] A2D0K1, Board Letter and Order TO-004-2011, issued 15 September 2011.

[22] Subsection 5(1) of the OPUAR requires Enbridge, as a Group 1 company, to do the following: keep separate books of account in Canada in a manner consistent with generally accepted accounting principles; unless otherwise authorized or instructed by the Board, keep accounts in the manner set out in the OPUAR; and, keep the system of accounts as prescribed in the OPUAR.

With respect to the Filing Manual requirements, Enbridge proposed to file with the Board, on an annual basis, audited annual consolidated financial statements instead of the information specified in Guide BB. Enbridge submitted that the requested exemption is consistent with past practice and that the filing of audited annual consolidated financial statements combined with the existing NEB audit provisions will provide the Board with the information required to evaluate and monitor financial information.

Prior to Enbridge filing its updated Application to include these requested exemptions, the Board asked Enbridge how it would meet the Filing Manual requirements on throughput disclosure in light of the statements in the Line 9 Rules and Regulations Tariff that Enbridge may publicly disclose the volume of each grade of Crude Petroleum tendered so long as each category is comprised of three shippers. Enbridge explained that shipper throughput information is confidential, but that in the event there are not three shippers in each category, Enbridge would either disclose the aggregate volume across all three crude categories or file the information confidentially with the Board.

Views of the Board

The Board notes that no Participant commented on the exemptions requested by Enbridge, and the Board approves Enbridge's request for an exemption from meeting requirements to keep the system of accounts as prescribed by the OPUAR.

Although Line 9 has been granted an exemption from Guide BB in the past, the Board is of the view that the expected increased use of Line 9 warrants consideration as to whether this exemption should continue. The Board notes that Line 9 is a common carrier pipeline and is expected to transport committed and uncommitted volumes. Although Enbridge has negotiated the toll on Line 9B with its committed shippers, and some of the information required under Guide BB is not necessary or applicable to Line 9, the Board is of the view that the availability of reliable, transparent information regarding throughput and certain financial information contributes to an efficient, well-functioning market.

The Board relieves Enbridge from the requirement to comply with the reporting and filing requirements set forth in the National Energy Board's Filing Manual, Guide BB entitled Financial Surveillance Reports. However, the Board directs Enbridge to file the following information, as set out in the attached Toll Order TO-002-2014 found in Appendix V:

i) On an annual basis, Enbridge shall file the following information:

    a) Income statement, including revenues and expenses broken down by major categories, for Line 9;

b) Rate base information for Line 9 by gross and net plant in service; and

c) Details of related company transactions over $500,000 between Enbridge Pipelines Inc. and other Enbridge corporate entities.

ii) On a quarterly basis, Enbridge shall file the throughput information by committed and uncommitted volume, by commodity type, and by receipt and delivery point, broken down by month. Should any of these categories not be comprised of volumes from at least three shippers, Enbridge may disclose the aggregate volume across all three crude categories, as described in Article 6(b) of the Draft Pro Forma Line 9 Rules and Regulations Tariff.

Appendix I

List of Issues

The Board will consider the following issues in this hearing:

1. The need for the proposed Project.
2. The potential commercial impacts of the proposed Project.
3. The appropriateness of the proposed Rules and Regulation Tariff and tolling methodology.
4. The potential environmental and socio-economic effects of the proposed Project, including the potential effects of malfunctions or accidents that may occur, and any cumulative environmental effects that are likely to result from the proposed Project.
5. The engineering design and integrity of the proposed Project.
6. The safety, security, and contingency planning associated with the construction and operation of the proposed Project, including emergency response planning and third-party damage prevention.
7. Consultation with Aboriginal groups and the potential impacts of the proposed Project on Aboriginal interests.
8. Consultation activities and potential impacts of the proposed Project on affected landowners and land use.
9. The terms and conditions, related to the above issues, to be included in any approval the Board may issue for the proposed Project.

The Board will not consider the environmental and socio-economic effects associated with upstream activities, the development of oil sands, or the downstream use of the oil transported by the pipeline.

Appendix II

Definitions for Criteria Used to Evaluate the Significance of Effects

Criteria	Rating	Definition
All criteria	Uncertain	When no other criteria rating descriptor is applicable due to either lack of information or inability to predict
Frequency (how often would the interaction that caused the effect occur)	Accidental	Rare and unplanned occurrence over the assessment period
	Single	One time event within any phase of the Project lifecycle
	Multiple	Multiple occurrences during any phase of the Project lifecycle
	Continuous	Continuous through any phase of the Project lifecycle
Duration (duration of the effect)	Short-term	Adverse environmental effect duration is in the order of months or limited to the proposed construction
	Medium-term	Adverse environmental effect duration is in the order of a few years
	Long-term	Adverse environmental effect would remain evident throughout the planned operation or beyond the lifecycle of the Project
Reversibility	Reversible	Adverse environmental effect expected to return to baseline conditions within the lifecycle of the Project
	Possible	Adverse environmental effect may or may not return to baseline conditions within the lifecycle of the Project
	Irreversible	Adverse environmental effect would be permanent, or would last in the order of a few generations
Geographic Extent	Project Sites and Temporary Work Spaces	Effect would be limited to the area directly disturbed by the Project, largely within the fenceline of the Project Sites and includes the TWS. Also referred to as the Project Development Area (PDA)
	Local Assessment Area (LAA)	Effect would generally be limited to the area in relation to the Project where direct interaction with the bio-physical and human environment could occur as a result of construction or reclamation activities. This area encompasses a 500 m radius surrounding the PDA
	Regional Assessment Area (RAA)	Effect would be recognized in the area beyond the LAA that might be affected on the landscape level. This area extends eastward from Sarnia Terminal to Montreal Terminal, and can generally be described as encompassing the municipalities and physiographic regions in which the Project Sites are located

Criteria	Rating	Definition
Magnitude	Low	Effect is negligible, if any; restricted to a few individuals/species or only slightly affects the resource or parties involved; and would impact quality of life for some, but individuals commonly adapt or become habituated, and the effect is widely accepted by society
	Moderate	Effect would impact many individuals/species or noticeably affect the resource or parties involved; is detectable but below environmental, regulatory or social standards or tolerance; and would impact quality of life but the effect is normally accepted by society
	High	Effect would affect numerous individuals or affect the resource or parties involved in a substantial manner; is beyond environmental, regulatory or social standards or tolerance; and would impact quality of life, result in lasting stress and is generally not accepted by society
Evaluation of Significance	Likely to be significant	Effect that is either: (1) of high magnitude; or (2) continuous, long-term, irreversible, and of RAA geographic extent
	Not likely to be significant	Any adverse effect that does not meet the above criteria for "significant"

Appendix III

Rulings

Corresponding Ruling/Direction by the Board		
Date	**Electronic Document ID**	**Subject**
22 May 2013	(A51982)	Ruling No. 1 – Procedural Update No. 2 Ruling on Participation
13 June 2013	(A52399)	Ruling No. 2 – Request Denied for Extension to Deadline for IRs
14 June 2013	(A52414)	Ruling No. 3 – Grant Application to Participate by way of Letter of Comment
19 July 2013	(A53007)	Ruling No. 4 – Motion Denied for Further Responses to IRs
19 July 2013	(A53008)	Ruling No. 5 – Motion Denied for Further Responses to IRs
25 July 2013	(A53107)	Ruling No. 6 – Motion Denied for Further Responses to IRs
24 July 2013	(A53078)	Ruling No. 7 – Motion Denied for Further Responses to IRs and Amendments to the Hearing Order Timeline
26 July 2013	(A53143)	Ruling No. 8 – Motion Denied for Further Responses to IRs and Amendments to the Hearing Order Timeline
29 July 2013	(A53164)	Ruling No. 9 – Request Denied for third Round of IRs
2 August 2013	(A53265)	Ruling No. 9 – Additional Reasons
30 July 2013	(A53181)	Ruling No. 10 – Extension Granted to Deadline for Letter of Comment
2 August 2013	(A53356)	Ruling No. 11 – Motion Denied for Deadline Extensions
6 August 2013	(A53357)	Ruling No. 12 – Motion Denied for Further Responses to IRs
8 August 2013	(A53437)	Ruling No. 13 – Motion Denied for Delay to Proceedings and for Deadline Extension to Provide Evidence

Corresponding Ruling/Direction by the Board		
Date	**Electronic Document ID**	**Subject**
3 September 2013	(A53861)	Ruling No. 14 – Extension Granted to Deadline for Response to IR
4 September 2013	(A53880)	Ruling No. 15 – Extension Granted to Deadline for Response to NEB IR 4.7
24 September 2013	(A54318)	Ruling No. 16 – Extension Granted to file Written Evidence
2 October 2013	(A54522)	Ruling No. 17 – Motion Denied to Strike Evidence and Direct IR Responses
2 October 2013	(A54522)	Ruling No. 18 – Extension Granted to Deadline for Written Final Argument
3 October 2013	(A54559)	Ruling No. 19 – Motion Granted to allow Mr. Jean Léger to Provide Oral Final Argument
8 October 2013	(A3L8T5) para. 173-178	Ruling No. 20 – Motion Granted to accept Letter filed by Aamjiwnaang First Nation and Chippewas of the Thames First Nation dated 27 September 2013 onto Record
10 October 2013	(A3L9F9) para. 2165-2174	Ruling No. 21 – NEB decision on the method of presentation for the final argument of Mr. Jean Léger
17 October 2013	(A3Q0Y6) para. 5069-5073	Ruling No. 22 – Motion Granted to allow Mohawk Council of Kanesatake and the Kanesatake First Nation to participate as a Commenter and accept Letter of Comment

Appendix IV

NEB Section 58 Order XO-E101-003-2014 Conditions

1) Enbridge shall comply with all of the conditions contained in this Order unless the Board otherwise directs.

2) Enbridge shall cause the approved Project to be designed, located, constructed, installed, and operated in accordance with the specifications, standards, commitments made and other information referred to in its Application or in its related submissions.

3) Enbridge shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations, procedures and its commitments for the protection of the environment included in or referred to in its Application or in its related submissions.

Prior to Construction

4) Enbridge shall file with the Board, at least 30 days prior to commencing construction, a construction schedule identifying key construction activities for the Project, and must notify the Board of any modifications to the schedule(s) as such modifications occur.

5) Enbridge shall:

    a) file with the Board and post on its company website, in French and English, at least 30 days prior to commencing construction, a Commitments Tracking Table listing all commitments made by Enbridge in its Application or in its related submissions, or during the OH-002-2013 proceeding in relation to the Project, including reference to:

        i) the documentation in which reference to the commitment is made (for example: the application and subsequent filings; responses to information requests; the transcript reference; any permit, authorization or approval requirements; condition filings; or other);

        ii) the accountability for implementing each commitment; and

        iii) the timelines associated with the fulfillment of each commitment;

    b) update the status of the commitments in Condition 5a) on Enbridge's website until such time that all commitments have been fulfilled, and advise the Board in writing of such updates where the status of any commitment has changed; and

c) maintain at its construction office(s):

  i) the relevant environmental portion(s) of the Commitments Tracking Table listing all regulatory commitments including, but not limited to, those commitments referred to in Condition 5a) herein,

  ii) copies of any permits, approvals or authorizations for the Project issued by federal, provincial or other permitting authorities, which include environmental conditions or site-specific mitigation or monitoring measures; and

  iii) any subsequent variances to any permits, approvals or authorizations in ii).

6) Enbridge shall file with the Board, at least 30 days prior to commencing construction, a Project-specific Environmental Protection Plan (EPP). The EPP shall:

  a) describe all environmental protection procedures, mitigation and monitoring commitments, as set out in Enbridge's Application or as otherwise agreed to in its related submissions;

  b) include maps of the environmental features within the Local Assessment Area (LAA) of each Project Site; and

  c) include a Project-specific Archaeological Resource Contingency plan.

7) Enbridge shall file with the Board, at least 15 days prior to commencing construction, the Project-specific Field Emergency Response Plan that would be implemented during the construction phase, and which includes comprehensive site-specific spill contingency measures that Enbridge would employ in response to accidental spills attributable to construction activities.

During Construction

8) Enbridge shall file with the Board, on a monthly basis, construction progress reports in a form satisfactory to the Board. The reports must include, but not be limited to, information on:

  a) the activities carried out during the reporting period;

  b) any environmental, socio-economic, safety and security issues and issues of non-compliance; and

  c) the measures undertaken for the resolution of each issue and non-compliance.

Prior to Requesting Leave to Open

9) Enbridge shall file with the Board, at least 90 days prior to applying for leave to open (LTO), an Updated Pipeline Engineering Assessment (Updated EA) in a similar format to that of the Line 9B Engineering Assessment. The Updated EA

shall be based on the in-line inspections (ILI) and excavations that Enbridge has performed on Line 9 in 2012 and 2013 from Sarnia Terminal to Montreal Terminal. The Updated EA shall include, but not be limited to:

a) a remaining life analysis, taking into account coincident features, demonstrating that the pipeline between Sarnia Terminal and Montreal Terminal is fit-for-service in the reversed flow direction at Board approved maximum operating pressures (MOPs). If Enbridge chooses to apply different operating pressures for this analysis a justification must be provided;

b) a pipeline predicted Rupture Pressure Ratio analysis for integrity threats (including coincident threats) using 100% of the Specified Minimum Yield Strength as reference;

c) ILI tool performance, including their probability of detection and probability of sizing;

d) Field-tool unity plots for crack and corrosion, including for depth and length; and

e) Results of the 2012 annual survey of the cathodic protection system.

10) Based on the MOP and integrity status information used in the Updated EA, at least 30 days prior to applying for LTO, Enbridge shall:

a) repair all features in the pipeline sections between Sarnia Terminal and Montreal Terminal as identified by additional assessments and/or re-assessments to which Enbridge committed in the Application that meet CSA Z662-11 repair criteria, and all features with a safety factor less than 125% of the MOP, including the defects which triggered the current self-imposed pressure restrictions specified in Enbridge's Line 9B Pipeline Engineering Assessment, regardless of existing operating pressure; and

b) file with the Board a report that includes, but is not limited to, a list of features repaired, feature sizes, safety factors prior to repair, and repair date(s).

11) Enbridge shall file its hydrostatic pressure testing program, pursuant to section 23 of the *National Energy Board Onshore Pipeline Regulations* (OPR), at least 60 days prior to applying for LTO.

12) Enbridge shall file with the Board, at least 60 days prior to applying for LTO, the leak detection system (LDS) manual for the Project. The LDS manual must include, but not be limited to, the following:

a) senior management policy and commitment to leak detection;

b) the roles, responsibilities, and authorities of personnel in the event of a suspected leak;

c) the theory and rationale for each LDS design and application. Enbridge LDS design must meet or exceed the latest version of CSA Z662-11-Annex E for all class location designations along Line 9 from Sarnia Terminal to Montreal Terminal;

d) the methodology and instrument requirements;

e) performance indicators such as the accuracy, reliability, and sensitivity of the LDS;

f) leak alarms and diagnostic messaging as well as related procedures;

g) any information to be provided by the LDS to assist in operating the LDS and responding to any potential leak;

h) the estimated maximum amount of product released before a leak is detected;

i) the process to be followed with respect to the continuous improvement, non-conformity, audits and corrective protocols;

j) the procedures for LDS record keeping, training, and performance evaluation; and,

k) the plan for maintenance, testing methods (i.e., simulated signal, fluid withdrawal, etc.), and frequency of testing.

The LDS manual (regarding the Enbridge Control System, Control Center, operators and teams, procedures, alarms, Material balance calculations, column separation, etc.) must also demonstrate compliance with the relevant conclusions and outcomes of the Compliance Verification Report under the *National Energy Board Act* In the Matter of Enbridge Pipelines Inc. - Edmonton Control Room Inspection and Assessment (May 2013) and related Order SO-E101-003-2013.

13) Enbridge shall file with the Board, at least 60 days prior to LTO, an Environmental Protection and Emergency Response Coordination Framework (Framework) for the Project that clearly demonstrates coordination, linkages and alignment of the Environmental Protection Program and the Emergency Management Program. The Framework shall address the objectives of risk assessment, protection, mitigation and monitoring and shall conform to OPR section 6.5.

14) Enbridge shall file with the Board at least 60 days prior to applying for LTO, a plan to update and implement Enbridge's continuing education program (including emergency management exercises), liaison program and consultation activities on emergency preparedness and response for the Project. This plan must comply with Annex A of the Guidance Notes for the *National Energy Board Onshore Pipeline Regulations* (OPR Guidance Notes) and include

a) the plan's scope;

b) the plan's objectives;

c) a list of regulatory authorities, municipalities and first responders that have been or will be consulted;

d) a list of Aboriginal groups that have been or will be consulted; and

e) the methods to track commitments made during consultation (if applicable) and to incorporate them into an amended Emergency Procedures Manual(s).

15) Enbridge shall file with the Board, at least 30 days prior to applying for LTO, confirmation that the emergency shutdown system (including backup power supplies) of each facility from Sarnia Terminal to Montreal Terminal comply with all requirements of OPR section 12 and CSA Z662-11 clause 4.14.3.3. Enbridge is also required to provide a description of how its emergency shutdown systems meet above mentioned requirements.

16) Enbridge shall file with the Board for approval, at least 90 days prior to applying for LTO, the results of its project to update the Line 9 mainline valves system from Sarnia Terminal to Montreal Terminal using Enbridge Intelligent Valve Placement (IVP) methodology. Through these results Enbridge shall:

a) demonstrate that the new Line 9 valves system meets or exceeds the requirements of CSA Z662-11clause 4.4 Valve location and spacing, with particular reference to clause 4.4.8, note (2);

b) demonstrate and explain why it believes that the maximum release volume between valves is as low as reasonably practicable, so as to prevent spill volumes that pose a significant risk to the public or the environment including, but not limited to, watercourses, water intakes, urban infrastructure, and ecologically sensitive areas. This assessment shall be based on the Watercourse Crossing Management Plan requested in **Condition 18**. It shall also address terrain profiles and flow conditions that could interact with the subject crossing in a manner that could present a risk to people or the environment at locations distant from the release;

c) provide explicit criteria and rationale for using 8 manually operated valves (MOV) on the pipeline, instead of remotely controlled valves, and describe how these MOVs are to be maintained, how access to them is to be assured (including during snowing periods), and for each valve provide an estimate of the maximum time to close the valve once an alarm is sounded;

d) describe the procedure to be used to verify the alarm before personnel are dispatched to manually close valves, including a description of any other measures that will be taken with respect to MOVs to reduce spill volumes in the event of a release, and the effect of these measures on the size of spill anticipated; and

e) explain if the use of these MOVs may negatively affect Enbridge's leak control evaluation for the Project (i.e., Initial Volume out of 95.2 m^3, total volume out, assessed incremental Project risk of 2.2%, etc.).

17) Enbridge shall file with the Board, at least 30 days prior to applying for LTO, the updated results of its 2013 Geohazard Study for Line 9. Enbridge should include

with the Geohazard Study a summary of its 2012-2013 depth of cover remediation activities.

18) Enbridge shall file with the Board for approval, at least 90 days prior to applying for LTO, a Project-specific Watercourse Crossing Management Plan (WCMP) to establish a management plan identifying the current watercourse crossing conditions and demonstrating how Enbridge will proactively manage watercourse crossings along the existing line.

The WCMP shall contain, but not be limited to:

a) criteria, and rationale for developing such criteria, used to identify major watercourse crossings along Line 9, and such criteria shall meet or exceed CSA Z662-11, clause 4.4.8, note (2);

b) a tabular inventory of:
    i. all watercourse crossings along Line 9, from Sarnia Terminal to Montreal Terminal;
    ii. those watercourse crossings which do not meet the criteria, with a clear indication of which criteria are not met (for each crossing);
    iii. those watercourse crossings which do meet the criteria; and
    iv. for each watercourse crossing that meets the criteria, the proximity to downstream water bodies, critical infrastructure and environmentally significant areas;

c) the location and frequency of monitoring activities, on both a project-wide scale (e.g., fly-overs) and a local scale (e.g., site visits);

d) feedback mechanisms in place to track and update the condition of the crossings within the Environmental Protection Program, as degraded conditions are identified from monitoring activities;

e) a description of possible degraded crossing conditions that may occur and their relative risk; and

f) a description of how environmental risks to watercourse crossings will be managed, including provision of a responsibility chart for decisions and the hierarchy of decision points identifying which remedial actions would be implemented, for which degraded conditions, and under what timeframes.

19) Enbridge shall submit to the Board, prior to applying for LTO, a plan to manage cracking features in the pipeline section between Sarnia Terminal and Montreal Terminal. This plan must include the timeline associated with the assessment methodology, and the rationale for selecting the timeline.

20) Enbridge shall file with the Board, at least 60 days prior to applying for LTO, an Emergency Response Plan (ERP) for Line 9, which demonstrates compliance with each element of Annex A to the OPR Guidance Notes in respect of each

municipality and each high consequence area (which includes major watercourse crossings and densely populated areas). Enbridge shall update the ERP as required by Annex A to the OPR Guidance Notes and file such updates with the Board.

Post Construction

21) Enbridge shall file with the Board, within 30 days following the receipt of Board approval for LTO, a confirmation by the accountable officer of the company appointed pursuant to OPR section 6.2, that the Project was completed and constructed in compliance with all applicable pre-LTO conditions in this Order. If compliance with any of the pre-LTO conditions cannot be confirmed, the accountable officer of the company must file with the Board details as to why compliance cannot be confirmed.

22) Enbridge shall file with the Board, within 30 days of the Project going into service the results of its detailed engineering and associated studies to validate the actual sensitivity and reliability performance of the Line 9 LDS computational monitoring system. These results shall incorporate longer term calculation windows on service fluid measurements for one day, one week and one month.

23) Enbridge shall file with the Board, within six months of the Project going into service:

    a) the results of post-construction noise monitoring at the Sarnia Terminal, North Westover Station, Hilton Station, Cardinal Station, Terrebonne Station, and Montreal Terminal; and
    b) a noise control plan, if necessary, for the terminals and stations to ensure that the Ontario or Quebec provincial noise guidelines are met.

24) Enbridge shall file with the Board, at least 30 days prior to LTO and every six months thereafter for the first three years of operation, an Ongoing Engagement Report for the continued operation of Line 9. The Ongoing Engagement Report will include, at minimum:

    a) the persons or groups with whom Enbridge offered or sought to consult during the previous six month period;
    b) the persons or groups actually consulted during the previous six month period;
    c) confirmation that Enbridge consulted or offered to consult at least once each year with, at minimum, a representative of each Landowner, Municipality, Conservation Authority, and Aboriginal group whose land, jurisdiction or traditional territory is traversed by Line 9;
    d) the methods, dates and locations of consultation activities;
    e) the information that was distributed to persons or groups (for example, health, safety and environmental performance of Line 9);

f) a summary of the comments and concerns expressed by potentially affected persons or groups;
g) a summary of the response made regarding each of the concerns or comments;
h) how outstanding concerns will be addressed;
i) how input from persons or groups has influenced the operation of the Project;
j) details regarding discussions with Aboriginal groups;
k) the details and results of the consultation undertaken with all persons who may be affected by any changes to the Project; and
l) details regarding discussions with municipal emergency responders.

25) Enbridge shall file with the Board for approval, within 12 months of being granted LTO, an update to the WCMP (WCMP Update), reporting the data which will be used to establish the current watercourse crossing conditions to be used in informing the Plan into the future.

The WCMP Update shall contain, but not be limited to:

a) a reiteration of both the criteria used to identify major watercourse crossings along Line 9, from Sarnia Terminal to Montreal Terminal, and the tabular inventory including:
    i. all watercourse crossings along Line 9, from Sarnia Terminal to Montreal Terminal;
    ii. those watercourse crossings which do not meet the criteria, with a clear indication of which criteria are not met (for each crossing);
    iii. those watercourse crossings which do meet the criteria; and
    iv. for each watercourse crossing that meets the criteria, the proximity to downstream water bodies, critical infrastructure and environmentally significant areas.
b) for crossings which meet the criteria (listed in a)iii) above), provide;
    i. channel-specific seasonal hydrographs (1 yr return);
    ii. bankfull profiles at crossing locations;
    iii. sediment characteristics immediately up- and downstream of the crossing location;
    iv. depth of cover and geotechnical assessments of the adjacent banks, to a distance of 100 m;
    v. floodplain delineation maps; and
    vi. scour assessments and flood frequency analyses at each watercourse crossing based on 50-yr, 100-yr, and regulatory storm flood volumes.

c) a description of how the data collected will be used to address the requirements to manage environmental risks, including the effects of the environment on watercourse crossings;

d) a schedule for future updates, incorporating monitoring activities provided in **Condition 18**, frequency of additional data collection and analysis, as well as the protocol for alterations or refinements to the Plan based on the updated watercourse conditions; and

e) evidence of consultation with Environment Canada, the Toronto and Region Conservation Authority and other appropriate provincial, regional and municipal authorities regarding the WCMP **(Condition 18)** and the WCMP Update.

26) Enbridge shall file with the Board within 12 months of receiving LTO and every 12 months thereafter for the first three years of operation, a report detailing the status of Enbridge's continuing education program (including emergency management exercises), liaison program and consultation activities with regulatory authorities, municipalities, Aboriginal groups and any other participating stakeholders that may have a role in responding to an emergency. The report shall include, but not be limited to the following:

a) a list of participants, consultation type, locations and timing of the continuing education program (including emergency management exercises), liaison program and consultation activities that have been conducted during the previous 12 month period;

b) the persons or groups with whom Enbridge offered or sought to conduct such activities during the previous 12 month period;

c) confirmation that Enbridge conducted or offered to conduct the continuing education and emergency response exercises in the manner, within the timeframes and with the persons or groups described in Annex A to the OPR Guidance Notes;

d) a description of any developed agreements or protocols;

e) identification of any issues or concerns raised during the continuing education program (including emergency management exercises), liaison program and consultation activities; and

f) explanation for outstanding issues or concerns, the steps that Enbridge will take or has taken to address or respond to them, or rationale for why no actions were taken.

27) Enbridge shall file with the Board, within 18 months following the receipt of Board approval for LTO, a proposed long-term integrity improvement plan to mitigate and monitor remaining ILI-reported corrosion (internal and external), geometry and cracking features in the pipeline sections between North Westover Station and the Montreal Terminal indicating, but not limited to, their timelines, the rationale for selecting those features, and the planned re-inspection interval.

28) Enbridge shall file with the Board for approval, within 18 months following the receipt of Board approval for LTO, an updated Deterministic Remaining Life evaluation for each segment (i.e., pump station to pump station) of Line 9 from the Sarnia Terminal and the Montreal Terminal. This assessment should take into account (but not be limited to) the results of the most recent ILI runs and excavations, coincident imperfections, the Board approved MOPs, and actual operating pressure cycling dataset for the most aggressive periods since the reversal.

29) Enbridge shall file with the Board for approval, concurrent with its final Ongoing Engagement Report, a plan describing how Enbridge will continue to engage persons and groups during the operation of Line 9 and how Enbridge will continue to promote transparency of information with its stakeholders.

30) Unless the Board otherwise directs prior to 6 March 2015, this Order shall expire on 6 March 2015 unless construction in relation to the Project has commenced by that date.

Appendix V

NEB Part IV Order TO-002-2014 Conditions

1) The tolling methodology is approved.

2) The Line 9 Rules and Regulations Tariff is approved.

3) Enbridge is relieved from the requirement to keep the system of accounts as prescribed by the OPUAR.

4) Enbridge is relieved from the requirement to comply with the reporting and filing requirements set forth in the National Energy Board's Filing Manual, Guide BB entitled Financial Surveillance Reports.

5) Enbridge shall file the following information on an annual basis:

    a) Income statement, including revenues and expenses broken down by major categories, for Line 9;
    b) Rate base information for Line 9 by gross and net plant in service; and
    c) Details of related company transactions over $500,000 between Enbridge Pipelines Inc. and other Enbridge corporate entities.

6) Enbridge shall file, on a quarterly basis, the throughput information by committed and uncommitted volume, by commodity type, and by receipt and delivery point, broken down by month. Should any of these categories not be comprised of volumes from at least three shippers, Enbridge may disclose the aggregate volume across all three crude categories, as described in Article 6(b) of the Draft Pro Forma Line 9 Rules and Regulations Tariff.